MacWEEK

05.27.96 | *The Newsweekly for Macintosh Managers* | VOLUME 10 NUMBER 21

Tanzania spec to blaze new trails for cloners

By David Morgenstern

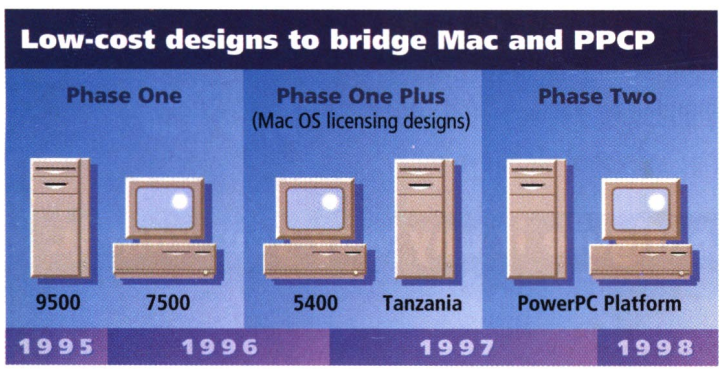
Apple this summer will fine-tune its clone strategy and tempt licensees with a new, scalable, low-cost Macintosh logic-board design code-named Tanzania.

Motorola Computer Group of Tempe, Ariz., demonstrated a Tanzania prototype at the Apple Worldwide Developers Conference in San Jose, Calif., this month.

Designed for entry-level and midrange systems, Tanzania will offer developers a wide range of options, Apple said. The design can handle PowerPC 603e and 604e processors with speeds up to 200 MHz and includes one, three or five PCI slots. Vendors can choose between PS/2 keyboard or ADB connectors and Enhanced IDE (Integrated Drive Electronics) or SCSI internal hard drives. It will also include LocalTalk, GeoPort and SCSI connectors as well as an ATAPI (AT attachment packet interface) CD-ROM drive, a first for Apple.

Tanzania will support either the Mac's auto-ejecting floppy drive or the manual-eject mechanisms common in Intel-standard PCs. It will come with a pair of DIMM

See Tanzania, Page 67



NEWS ANALYSIS

NC coalition frames plans for Net boxes

By James Staten

Apple last week joined a group of industry leaders in sponsoring the Network Computer Reference Profile 1, a specification for low-cost devices that can access the Internet.

The partners, including IBM Corp., Netscape Communications Corp., Oracle Corp. and Sun Microsystems Inc., said the final specification is expected by August.

Joining an increasingly competitive new product category, the Network Computer (NC) profile will not mandate a particular hardware platform. Instead, the

See NC, Page 66

Claris e-mail to live off LAN

OfficeMail server addresses SOHO

By Joanna Pearlstein

E-mail for everyone seems to be the goal of Claris Corp. This summer, the Santa Clara, Calif.-based company will expand its connectivity offerings with a low-end e-mail server designed for small offices and home offices.

According to sources, OfficeMail will be a LAN-based e-mail system that runs on AppleTalk as well as TCP/IP networks, and will use Post Office Protocol 3 (POP 3) and SMTP (Simple Mail Transfer Protocol).

Reportedly due in June, it will support between 20 and 30 users and will send e-mail to and from the Internet via a UUCP (Unix to Unix Copy Program) gateway. Sources said it is not being designed for use as an enterprisewide mail system.

Like its client cousin, Claris Emailer, sources said OfficeMail is easy to set up and use. "It's a no-brainer. It's slick," one beta tester said.

While Emailer creator Fog City Software Inc. of San Francisco is reportedly not involved, OfficeMail will feature a tabbed interface similar to that product. User account information and

See Claris, Page 68

Apple revives scripting

AppleScript lives through hiatus

By Clifford Colby

After years of neglect, Apple is breathing new life into AppleScript. At this month's Apple Worldwide Developers Conference in San Jose, Calif., the company announced plans to release this year the first update to its scripting system since late 1993.

The upgrade, Version 1.2, will run native on Power Macs, strengthen its ties to OpenDoc and include a swarm of bug fixes. Apple also announced it will soon begin work on Version 2.0, which is expected to be tuned for speed, have built-in commands for CGI (Common Gateway Interface) development and come with support for the

See Scripting, Page 68

CorelDraw 6.0 struggles against Mac powerhouses

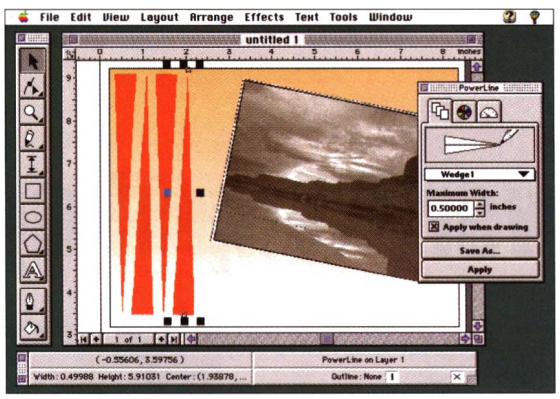
By Ben Long

Does the Macintosh platform need another high-end illustration package? Corel Corp. thinks so. Waiting in the wings is a Macintosh version of CorelDraw 6.0, the company's venerable PC graphics package, due to ship in late June. Corel, which dominates the illustration market in the Windows world, is hoping to grab a slice from long-time Mac rivals Adobe Illustrator and Macromedia FreeHand.

Beta Test

But the problem is CorelDraw offers nothing radically new to the Mac illustration market. It does have some interesting tools that the top two Mac applications lack, but users of those programs won't find a compelling reason to switch to CorelDraw, and Mac illustrators without product allegiance will find Corel's interface less friendly

See CorelDraw, Page 23



CorelDraw 6's PowerLine palette lets you define complicated strokes of varying widths that are automatically applied to any line or shape you draw.

Back on Mac: Sites rethink platform swap

By Mark Hall

Besieged Mac users are stepping out from behind the barricades to discover that their defense of the desktop computer may have succeeded for now.

Last week, Los Alamos (N.M.) National Laboratory revealed that its Information Architecture Project, which sets computing standards at the Lab, will retain the Mac as one of its "preferred computing platforms." The Mac had been under fire at the Lab (see 04.01.96 Page 1), which ranked No. 3 in last year's MacWEEK 200 survey of the largest Mac sites in North America.

The study to determine the Mac's viability there caused upheaval among users and "was blown way out of proportion," according to one source.

At Northern Telecom Ltd., where the official policy remains

See Sites, Page 67

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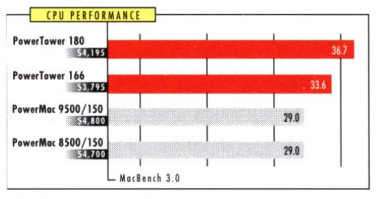

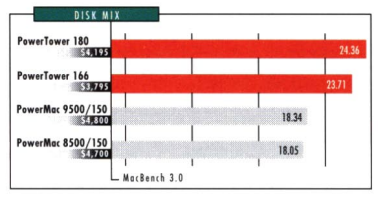

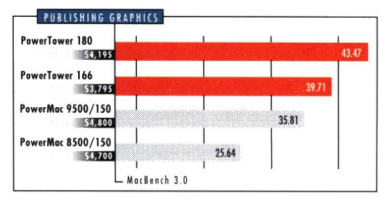

Power Computing has designed the world's fastest Mac OS system - again. Based on the PowerPC 604 running at a blazing 180 or 166MHz, PowerTower is more than 20% faster and more than 20% less expensive than even the fastest Apple - the PowerMac 9500/150. Power Computing's new PowerTower is the highest-performing, most reliable Mac OS system available today for serious power users.

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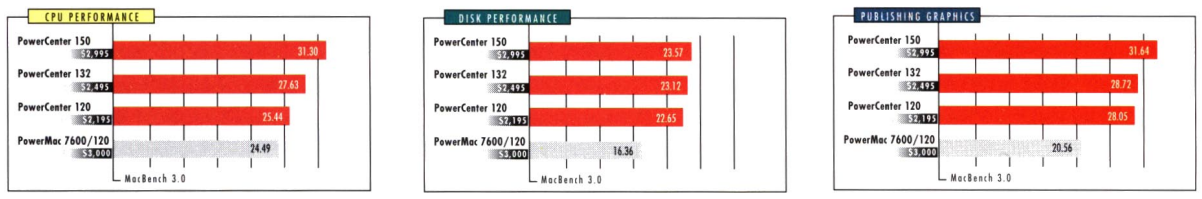

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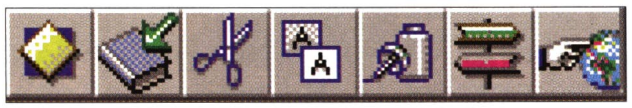
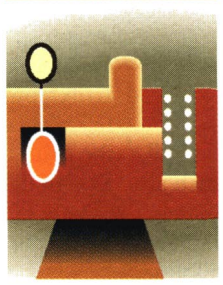


Lotus Notes 4.1 crams in more tools to enhance e-mail capabilities and offer Web access. See Reviews, Page 23.

Eyeballing Apple disk formatters. See MacInTouch, Page 29.



Webmasters will be able to create moving logos with two upcoming Web animation applications. See GA, Page 8.

Innovative Desktop is readying ExpressO, the latest entry in the Internet server arena written entirely in Java. See Gateways, Page 12.

23 REVIEWS

Beta Test: CorelDraw 6.0 takes on Adobe Illustrator and Macromedia FreeHand • Lotus Notes 4.1's Mac client worth the wait • Reviews Forum: PowerCenters revisited

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Corporations are evaluating the current Internet frenzy and finding that it's hard to make a buck on the Web.

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MACWEEK INSIDER MISSY ROBACK

Back to the drawing board

Balance is one of the basic elements of design: Good balance evenly distributes the pieces in your design; a lack of balance can throw everything out of whack.

It's fitting, then, that there's a distinct balance at the high end of the Mac illustration market. It's not dominated by one product; instead, the two market leaders — Adobe Illustrator and Macromedia FreeHand — seem to hover around the top spot in relative harmony. There may be fluctuations — when one application is upgraded it may take the lead for a while — but lately, when one product is upgraded, you know the other is not far behind.

The outcome is that Illustrator and FreeHand are so closely matched it's often hard to determine which is better. One may handle a specific task more ably than the other, but in the end it's a draw. Even graphic designers may not be able to say which product is superior. Most will tell you their primary application is the one they learned first.

So what will happen when Corel Corp. attempts to upset the market balance by releasing its first Mac version of CorelDraw? My prediction: Not much.

I don't want to burst Corel's balloon; the company should be commended for bringing CorelDraw to the Mac, compared with the number of Mac developers doing a reverse commute.

But while CorelDraw safely owns the Windows illustration market, the professional Mac graphics market is not as easily penetrable. Graphics programs have been a Mac stronghold since the platform's infancy, and users are loyal to those ground-breaking programs. And, let's admit it, the Mac graphics market is not only more sophisticated, but a wee bit snobbish: Mac designers create art; PC designers create business graphics.

But users want good programs, regardless of where they originate, and CorelDraw 6 is a very capable program. Yet, as reviewer Ben Long discovered in his beta test of CorelDraw 6 (see Page 1), it doesn't offer Mac users a compelling reason to switch from Illustrator or FreeHand. For the most part, its feature set mimics the competition's. There are some unique tools, but none strong enough to draw Illustrator or FreeHand loyalists to a product that, however slightly, still smells like Windows. CorelDraw will find its niche, though, with cross-platform shops that already use the application on Windows.

CorelDraw has some unique tools, but it still smells like Windows.

Perhaps if Corel had taken the plunge sooner the outlook might be different, but in 1996 FreeHand and Illustrator are so firmly entrenched as the Mac tools of the trade for serious design work that it will take more than a wannabe to turn artists' heads.

It will take looking at the current model of vector graphics and deciding what works and what could be done better — a redesign, you might say. So far, two new applications offer a rough sketch of what could be: SmartSketch from FutureWave Software Inc. and LightningDraw GX from Lari Software Inc. Both made impressive showings in their initial releases, largely because of intuitive tools that add a certain gracefulness to the drawing process.

For instance, both programs hide Bezier control points and handles. To reshape a curve, just grab part of it and drag. It's a more natural approach that lets you concentrate on the art instead of the technical.

Unfortunately, FutureWave and Lari are small companies that may lack the resources for high-end competition. FutureWave is upgrading SmartSketch by offering a Web-savvy version, but it currently has no plans to take the novice-oriented product significantly higher. The more full-featured LightningDraw GX, which still lacks color separations and support for a number of file formats, faces a formidable task: Getting users to install QuickDraw GX.

The right competition could nicely knock things out of whack in the Mac graphics market, but it requires a trip back to the drawing board. Are there any creative developers out there who have designs on the market? Let's see your work. □

Missy Roback is MacWEEK senior reviews editor. She welcomes feedback at missy_roback @macweek.com.

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Adobe to update ATM

Acquires font util maker Ares

By Rebecca Gulick

Adding font-management capabilities to its popular typeface utility, Adobe Systems Inc. this fall will ship a major revision to Adobe Type Manager.

And in a move that reflects the company's new cooperative spirit with Microsoft Corp., Adobe Type Manager Deluxe 4.0 for Mac and Windows will support TrueType as well as Type 1 fonts.

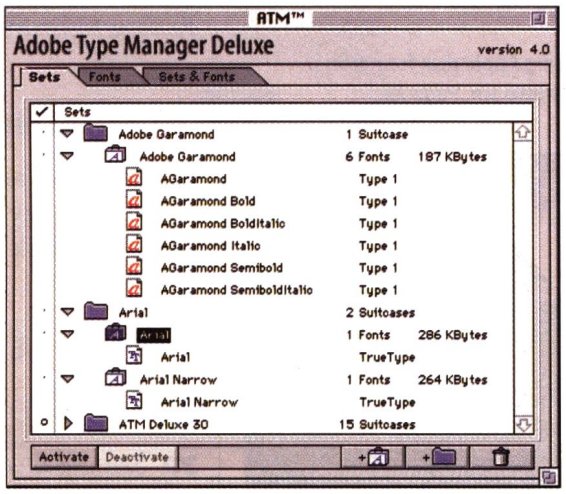
Elsewhere on the font front, Adobe is working on an update to Adobe Type Reunion and recently acquired font software maker Ares Software Corp.

ATM Deluxe 4.0 will let users drag and drop a TrueType or Type 1 font into sets; users will be able to turn sets or individual fonts on and off. Version 4.0 will also be able to turn on a font automatically and deactivate it when it is no longer needed or when the computer is restarted.

The update will let users view and print font samples. Version 4 will also analyze fonts or font suitcases and report damaged fonts.

ATM Deluxe will let users export font sets to other users and across platforms; it will substitute fonts via Adobe's multiple-master technology.

The ATM Deluxe 4.0 CD-ROM, with 30 free fonts and the latest versions of the Adobe PostScript printer driver and Acrobat Reader software, will be $49.95 for the first 90 days and $99.95 thereafter.



Moveable faces: Adobe Type Manager Deluxe 4.0 will support TrueType and Type 1 fonts and will let users drag and drop a typeface into sets that can be turned on and off.

The company this fall will also release Adobe Type Reunion Deluxe 2.0, a font utility that will let users customize their font menus. Users will have the option of displaying font names in their actual faces and changing the font names in the menu. Fonts can be grouped by family, project or application.

ATR Deluxe 2.0 will cost $29.95 for the first 90 days and $60 thereafter. Upgrades will be $29.95. A bundle of ATM and ATR will cost $69.95 for the first 90 days.

Meanwhile, Adobe this month acquired Ares of Foster City, Calif. Adobe did not disclose details of the transaction but said there would be "minimum impact" on shareholder earnings.

Adobe said it will integrate Ares' font-compression and substitution technology into its PostScript printer-imaging language.

Adobe said it has discontinued FontChameleon, Ares' font-modification package, but it will sell other Ares products, such as FontHopper and FontMonger, through its Image Club Graphics subsidiary. Adobe said it will support registered users of Ares' retail products for one year.

Noting that Hewlett-Packard Co. recently acquired font-synthesis technology from ElseWare Corp., Kathleen Tinkel of Tinkel Design, based in Westport, Conn., said she is curious to see how Adobe leverages the synthesis technology in FontChameleon. "What exactly can Adobe add to PostScript from FontChameleon?" she asked.

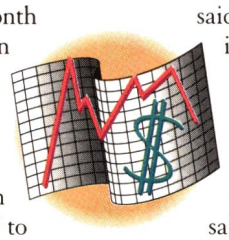
Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400 or (800) 833-6687; fax (415) 961-3769; http://www.adobe.com. □

Peripherals sales hurt by PowerBook recall

By Joanna Pearlstein

Two vendors of PowerBook products have pinned lower earnings on poor sales and the recently announced repair program for Apple's laptop line.

Focus Enhancements Inc. of Woburn, Mass., this month announced a $3.6 million net loss for its first quarter, ended March 31, including a $2.2 million write-down. Revenues fell from $5.2 million in the first quarter of 1995 to $3.8 million in the first three months of 1996.



The $2.2 million write-down was for inventory of its MV 16-EN PowerBook video and Ethernet card, designed for Apple's 190 and 5300 systems. In a U.S. Securities and Exchange Commission filing, Focus attributed the write-down to Apple's problems with "product quality and poor sell-through issues ... including a recall" of PowerBooks.

In a May 8 bulletin, Apple asked dealers to return all PowerBook 190, 190cs, 5300, 5300c, 5300ce and 5300cs systems in inventory for repair. Apple also announced a repair program for various Performa and educational Power Mac models.

Focus also said revenues were down because Apple canceled a PowerBook that was due to ship in February; an MV-16 EN card would have been included with each of those units.

Global Village Communication Inc. of Sunnyvale, Calif., last week said it expects lower earnings in the next quarter because of the PowerBook repair program. The company, which had a 53 percent rise in earnings last quarter, said in a statement that it expects to sell fewer PowerPort PC modem cards this quarter because of the repair program.

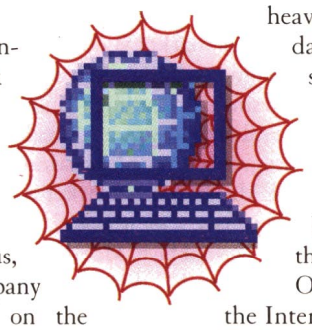
"Our customers usually purchase PowerPort PC cards at the same time they purchase a PowerBook," said Kevin Burr, a Global Village spokesman. "To an extent, there aren't any PowerBooks to buy, and that's how it has an impact on us."

Other companies that sell PowerBook products were less concerned. "We are shipping everything we build the minute it's done," said Vincent Fedele, president and CEO of VST Technologies Inc. of Concord, Mass. "We see PowerBooks doing very well right now and, if anything, accelerating as users find they're more stable." □

CompuServe moving to Internet

By James Staten

CompuServe Inc. announced last week that it intends to move its proprietary services to the Internet by the end of the year.



The Columbus, Ohio-based company said its offerings on the CompuServe Information Service, WOW! and SpryNet would be accessible with a Web browser and 80 percent of all new content will now be Internet-based.

CompuServe said it does not plan to abandon its proprietary services and software but will shift its more than 5 million members to new software that relies more heavily on Internet standards. MacCIM 3.0, scheduled for release this summer, will feature an integrated browser that will ease Mac-based members through the change.

Once a full citizen on the Internet, CompuServe's exclusive services will continue to be available only to members. For added value, the company said it plans to prepay the membership fees for several Internet services so its members can access them free.

In related news, CompuServe said it is more than doubling its customer-service staff and doubling its number of local telephone lines. It plans to offer 100,000 28.8-Kbps ports by the end of summer.

CompuServe's move toward the Internet mirrors a similar effort started late last year by Prodigy Services Co. of White Plains, N.Y. CEO Edward Bennett said Prodigy will be entirely Internet-based by the fall. □

Landi is new COO at Apple

By Marty Cortinas

Apple CEO Gilbert Amelio's corporate strategy gained a continental look and feel last week when the company appointed Marco Landi executive vice president and chief operating officer.

Landi, 51, will assume his new duties June 1. He will oversee four new product divisions — Macintosh, Alternative Platforms, Information Appliances and Imaging — as well as worldwide sales, segment marketing, manufacturing operations and AppleAssist.

Currently an Apple senior vice president and the president of Apple Europe, Landi will continue to report to Amelio. Apple said Landi's replacement has not been decided.

"His strength lies in his ability to identify the need for change and to drive the implementation of necessary changes quickly and effectively," Amelio said.

Landi joined Apple in March 1995 after 25 years with Texas Instruments Inc. of Temple, Texas. □

For the record

In the 05.20.96 story on Pinnacle Micro Inc. (Page 6), Jim Porter was incorrectly quoted. He said that while the company is having problems with Apex, it has a positive track record with subsystems.

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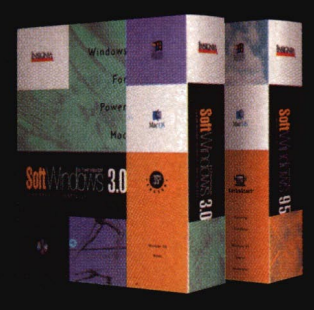

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BOTTOM LINE DISTRIBUTION

Developers applaud sanctions

Mac-clone deal OK despite rift with China

By Mark Hall

Uncle Sam got high fives from the software industry this month when the U.S. government threatened to slam-dunk sanctions on China for its failure to abide by a 1995 anti-piracy agreement.

The international dispute is taking place despite record hardware and software sales reported in China. Sources said the trade flap would not likely disrupt the Mac-clone start-up Nanjing Power Computing Ltd., a joint venture between Motorola Inc. and Panda Electronics Group Co. of Nanjing, China (see 02.26.96, Page 1).

Burgeoning shipments of personal computers in Asia led the way for both pirated and legal software sales, particularly in China, where the nation's Electronics Industry Ministry reported 1.1 million PC sales in 1995, a 54 percent jump over the previous year. According to the Software Publishers Association, legal sales of the industry's products ballooned 184 percent last year in China, the second-highest growth rate in Asia, after Thailand.

Industry observers said that if the Chinese government had implemented the 1995 anti-piracy accord, sales would have been even greater. The U.S. government has accused China's leadership of allowing software pirates to operate unfettered in the country. In retaliation, the Clinton administration is prepared to levy $3 billion in tariffs on Chinese exports to the United States.

China software sales second in growth rate in '95

COUNTRY/REGION	Q4 '95 REVENUES (MILLIONS)	PERCENT CHANGE	1995 REVENUES (MILLIONS)	PERCENT CHANGE
Thailand	$3.1	155	$11.6	277
China	$1.1	95	$4.6	189
India, Pakistan	$4.6	-91	$10.6	124
Taiwan	$7.7	28	$37.9	75
Malaysia	$4.3	52	$13.4	60
Hong Kong	$6.5	23	$30.7	45
Japan	$231.8	83	$757.8	45
Singapore	$10	-38	$42	44
Korea	$8.9	41	$34.4	40

Source: Software Publishers Association.

Steve Peters, associate general counsel at Adobe Systems Inc. of Mountain View, Calif., said, "We support the steps the government has taken so far, especially given the scope of the problem there."

Dave Meltzer, group product manager for Mac applications at Microsoft Corp. of Redmond, Wash., said, "We are in favor of activities supporting the advance of intellectual property rights."

Peters said the problem of illegal CD-ROMs originating in China "spans Adobe's entire product line" for both Mac and Windows machines. He said the discs have been uncovered in "China, throughout Asia, the U.S., everywhere."

The Washington, D.C.-based SPA, which supports the proposed trade sanctions against China, estimates that 31 factories are producing tens of millions of CD-ROMs each year. These discs are loaded with unlicensed programs and, in effect, stealing money from developers, SPA said.

Meltzer said his company's sales would double if piracy were eliminated, and Peters said Adobe estimates there is one pirated copy of its products in circulation for every legal copy on the market.

Although formed just two months ago, the Motorola and Panda joint venture is already receiving sample chips from Motorola's Austin, Texas-based semiconductor division. "We don't anticipate that there will be any fallout in Nanjing," one source said. □

CopyPaste expands clipboard capability

By Marty Cortinas

Script Software International aims to make copying and pasting multiple items on the Mac a little less sticky with the just-released CopyPaste 3.0.

CopyPaste, which now includes native Power Mac code and more text-processing capabilities, is an extension that comes with 10 clipboards instead of the Mac's standard one. Each CopyPaste clipboard can store text, pictures or sounds.

The extension can process text in any of the clipboards, allowing users to remove extra spaces or change case, for example.

CopyPaste options, including built-in help, can be manipulated via commands added to the Edit menu in every application.

CopyPaste 3.0 is $20 shareware and is available in English, Japanese and German.

Script Software International of Kings Beach, Calif., can be reached at phone and fax (916) 546-9005; julian@sierra.net; http://members.aol.com/copypaste1/index.html. □

Sony readies fast tape drive

By David Morgenstern

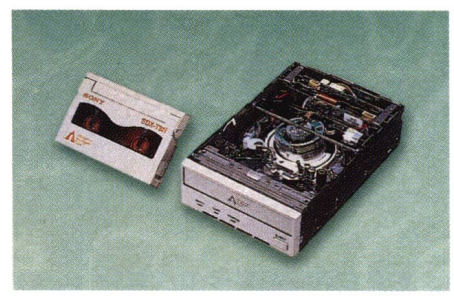
Sony Electronics Inc. said it expects in July to release its SDX-300, the first in a new line of high-performance 8mm OEM tape drives.

The SDX-300 will provide a native capacity of 25 Gbytes per cartridge and an average data transfer rate of 3 Mbytes per second, the company said. The Fast and Wide SCSI-2 drive will use a proprietary Advanced Intelligent Tape helical-scan format.

Offering performance and cost similar to some digital linear tape (DLT) drives, the forthcoming SDX-300 will cost about $4,995. The drive will use proprietary, coated, cobalt tape; SDX cartridges will cost about $100, about double the price of comparable-capacity DLT cartridges.

The San Jose, Calif.-based company said the drive will integrate a built-in head cleaner and fan, which boost its average head life to 30,000 hours. The unit will have an MTBF (mean time between failure) of 200,000 hours. The SDX-300c, a similarly priced model with hardware compression, is due in the fall.

Sony said it expects by the end of the year to release a version of the drive that supports the company's Memory In Cassette (MIC) technology. MIC cartridges will use a 16-Kbyte chip to hold directory information usually written to a header file at the beginning of the tape. Sony said the technology will reduce access and loading times for tapes; it will have an average load time of 7 seconds.



Looking much like an ordinary 8mm tape drive, Sony's forthcoming SDX-300 OEM mechanism will aim for DLT speeds.

The MIC technology will also support up to 256 partitions on a tape. Aimed at digital video applications, the multiple partitions will require new driver software, Sony said. □

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Animated spin on Web

Two 2-D apps get pages moving

By Kelly Ryer

As Webmasters look for ways to spice up their sites, 2-D animation is enjoying a renaissance. Web animation tools are sprouting like mushrooms; the latest crop includes Dimension X's Liquid Motion and Totally Hip Software Inc.'s WebPainter.

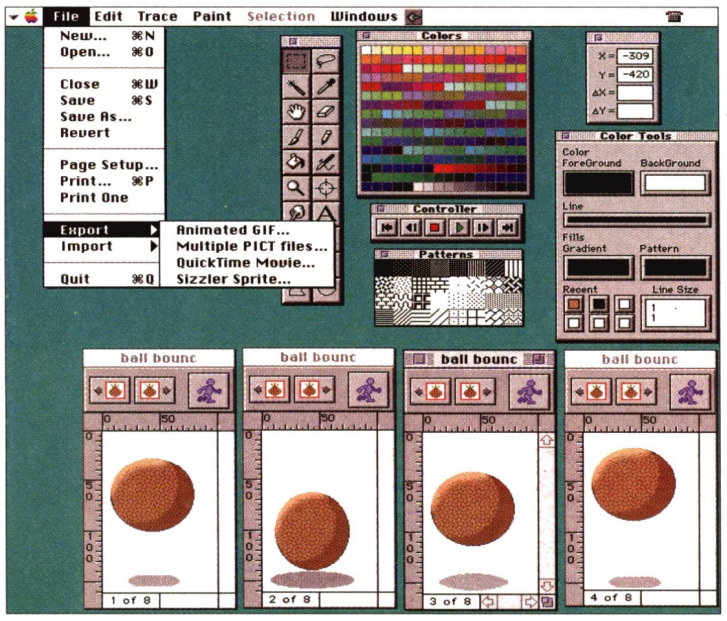
Coded entirely in Sun Microsystems Inc.'s Java, Liquid Motion will run on any Java-capable platform, according to Dimension X. The package, which will be announced this week at Sun's Java One developers conference in San Francisco, will cost $149.99 when it ships this fall. Liquid Motion will let users create 2-D animation using motion and path behaviors with control over timing and frame rates. Audio and sprite elements can be synchronized with animation.

Liquid Motion will support GIF and JPEG formats for images as well as .AU sound files. When an animation is completed, Liquid Motion will create an HTML file and an animation script that can be inserted in a Web page. Any Java-compatible browser will be able to run the animation applet without requiring a special plug-in, the company said.

Dimension X said a beta of Liquid Motion for the Mac will be available on the company's Web site in mid-June.

Hot on the heels of its Sizzler animation playback module for Netscape Navigator, Totally Hip announced WebPainter, a simple

See Animation, Page 10



Follow the bouncing ball: With WebPainter's MacPaint-like tool set, users will be able to generate basic 2-D animations exportable in several formats.

Linotype to roll out 8-page imagesetter

Signasetter due for August ship

By Matthew Rothenberg

Linotype-Hell Co. is preparing to extend the horizons of its imagesetter line with a new model that can output eight-page layouts.

The Signasetter, slated to ship in August and starting at about $210,000, will replace Linotype's R 3030PS and LTC 930 imagesetters, the company said.

The new device will use an internal drum with a helium-neon laser and output to film; direct-printing foils for the Signasetter will be available later, according to Linotype. The imagesetter will offer a maximum resolution of 5,080 dpi at up to 30.3 by 42.1 inches. It will provide positive, negative, and right- or wrong-reading output, the company said.

According to Linotype, the Signasetter will output an eight-page form at 1,270 dpi in 2 minutes, 20 seconds. The device will support irrational screening up to 600 lines per inch, depending on resolution, as well as Linotype's High Quality Screening and Diamond Screening methods.

The Signasetter will come with a supply cassette that holds up to 60 meters of film.

The device will include Linotype's own DeltaTechnology, a PostScript Level 2 print server that integrates trapping and screening capabilities.

In addition, the imagesetter will connect to two external RIPs via a pair of high-speed SpeedWay interfaces. The device will also sport SCSI, V.24 and RS-232C serial interfaces for service and diagnosis, according to the company.

The Signasetter will come with either a Bacher or Stoesser five-hole head-punching system.

Linotype-Hell Co. of Hauppauge, N.Y., can be reached at (516) 434-2000 or (800) 842-9721; fax (516) 434-2706; http://www.linotype.com. □

Stencil-It! keeps it simple

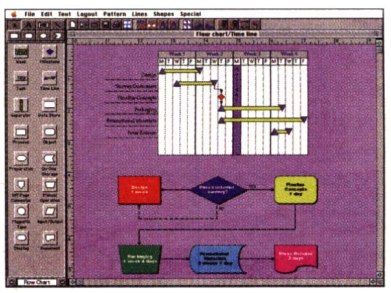
By Rebecca Gulick

The artistically impaired will gain a connect-the-dots drawing solution in June when Kaetron Software Corp. ships a low-cost Mac graphics program designed to fill the gap between clip art and high-end graphics software.

Aimed at the small- and home-office and education markets, Stencil It! will let users create custom graphics from a palette of pre-drawn line art called Stencils.

The package will offer many of the same features as Kaetron's TopDown FlowCharter 4.5 flow-charting tool (see 09.11.95, Page 6). In flow charts, network diagrams and organizational charts, Stencil It! will automatically connect lines and perform intelligent rerouting. Users can decide whether to merge multiple lines to an object or keep them distinct.

Stencil It! will let users paste PICT and EPS files into their creations. It will also offer QuickStart templates for documents such as floor plans, business forms, engineering schematics and maps. Users will be able to create nested graphics and attach an icon that represents a document written in another application; when a viewer clicks on the icon, Stencil It! will launch the application and open the embedded document. A Notecards feature will let users add text to their graphics.



Stencil It! will offer a palette of pre-drawn line art for making illustrations.

Stencil It! will list for $129 but will carry a $99 introductory price.

Kaetron Software Corp. of The Woodlands, Texas, is at (713) 298-1500 or (800) 938-8900; fax (713) 298-2520; http://www.kaetron.com.

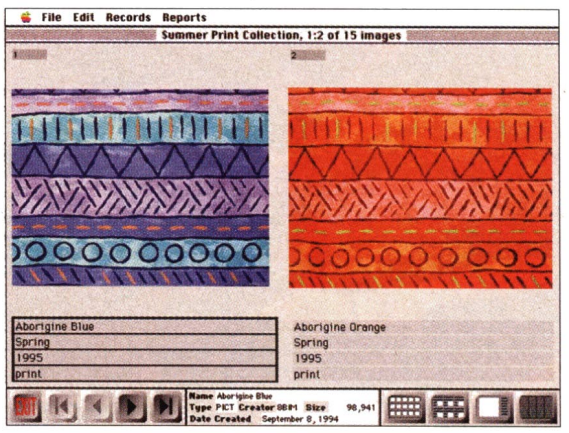
WebMaker takes a dip into Java

By Matthew Rothenberg

Harlequin Inc. this month added some new twists to WebMaker, its FrameMaker-to-HTML conversion tool.

WebMaker 2.2, a free upgrade to the $99 package, adds a Java-based navigation applet. It also introduces an automatic conversion feature that Harlequin said speeds the creation of HTML pages based on documents created in Adobe Systems Inc.'s

See WebMaker, Page 10



Thumbs Up can manage an unlimited number of digital media files. The clips can be organized into collections, and each clip and collection can contain up to 100 fields.

Thumbs Up juggles media

By Rebecca Gulick

Thumbing through digital media files may now be a little easier thanks to the latest version of Thumbs Up, Knowles Marketing Inc.'s multimedia-archiving application.

Version 2.7 of the $1,995 package adds slide-show capabilities that let users review search results on the fly. Thumbs Up, which was originally developed and distributed by Graphic Detail Inc. of Raleigh, N.C., is a relational database that can capture, catalog, organize, retrieve and archive an unlimited number of digital

See Thumbs Up, Page 10

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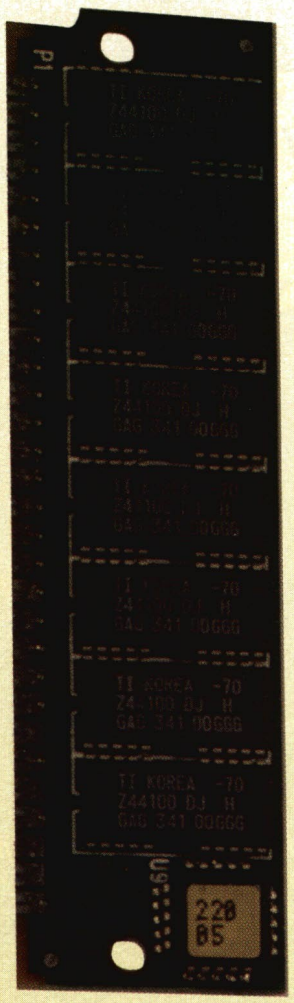

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BOTTOM LINE DISTRIBUTION

Acuris to unveil models

Human body types abound on CD-ROM

By Leander Kahney

Acuris Inc. in June will release a new set of off-the-shelf 3-D models featuring human figures of various shapes and sizes.

Called 18 Perfect People, the $399 CD-ROM collection features a range of clothed and unclothed male and female bodies.

The collection, which was co-developed with Zygote Media Group Inc. of Provo, Utah, includes Acuview, Acuris' imaging package.

Each of the nine royalty-free, grouped figures comes in single-skin and fully jointed versions. The jointed models are segmented, the company said.

The models can be imported into most graphics applications, Acuris said. Formats include Apple's 3DMF (3-D metafile format), DXF (Drawing Interchange File) and Wavefront OBJ.

Acuris' other collections include Clip-Model Library, a $199 set comprising 110 models of furniture, people and terrains; David's House and The Modern House, two $299 collections featuring intricately detailed houses; and Air, Sea & Land, a $299 collection of 50 vehicles.

Shiny happy people: Acuris' new CD collection includes 3-D models of 18 human figures.

Acuris Inc. of Washington Crossing, Pa., can be reached at (215) 493-4302 or (800) 652-2874; fax (215) 493-4305; http://www.acuris.com. □

Thumbs Up

From Page 8

media clips, including animations, TIFF, JPEG, PICT, Photo CD and EPS images; System 7 sound and AIFF (Audio Interchange File Format) audio; QuickTime video; and text.

The software can display up to 15 thumbnail views and two fields of data at a time or show a full-screen, 24-bit-color view.

Users can call up the full-resolution versions of images cataloged in Thumbs Up by Command-clicking on a thumbnail. A Thumbs Up archive can also contain links to creator applications, such as Adobe Photoshop.

Thumbs Up stores each multimedia file in a master collection and shares it among multiple custom collections. Each collection can include up to 100 fields containing search terms.

In addition, each clip can have up to 100 attribute fields as well as a 32,000-character notes field. The Thumbs Up search engine performs simple searching, searching by example and Boolean searching. VCR-style buttons simplify navigating the database, Knowles said.

Gerald L. Cannon, assistant professor of visual art at Loyola University in New Orleans, said he and his colleagues use Thumbs Up as a teaching tool. Cannon said he can "tie a QuickTime clip of a Dadaist performance to the music of Eric Satie and ... scan through impressionist or surrealist paintings and sculpture." Cannon said such a tool "is what we in visual-art instruction have longed for."

Client-server configurations for five to 100 users range in price from $11,475 to $75,000.

Knowles this month plans to ship a scaled-down version of Thumbs Up priced at about $400. The company said the limited version will support just 10 fields.

Knowles Marketing Inc. of Durham, N.C., can be reached at (919) 419-1990 or (800) 234-8635; fax (919) 419-7484; kmiserv@aol.com. □

WebMaker

From Page 8

heavy-duty page-layout tool, FrameMaker.

WebMaker 2.2's navigation panel, developed with Java, Sun Microsystems Inc.'s component language, lets users add scrollable tables of contents to Web pages generated from FrameMaker documents.

The new RapidRules capability analyzes FrameMaker tags and generates a conversion template based on rules in the WebMaker library. According to Harlequin, Version 2.2 also features an enhanced interface and better conversion of graphics within FrameMaker documents. The upgrade supports table entries that span columns as well as table captions. It also lets users create hyperlinks within tables, the company said.

Like earlier versions, WebMaker 2.2 lets users convert FrameMaker 4 or 5 documents containing graphics, tables and equations into HTML. The software draws on styles defined in the FrameMaker file and generates hypertext links automatically, Harlequin said. It features design tools and Harlequin's WebMaker Language for fine-tuning HTML pages.

WebMaker 2.2 is currently available for 680x0-based Macs only; Harlequin said a native Power Mac version will be available this summer.

Harlequin Inc. of Cambridge, Mass., can be reached at (617) 374-2400; fax (617) 252-6505; http://www.harlequin.com/. □

Matrox slashes PCI board prices

New pricing from Matrox Graphics Inc. may sway graphic artists shopping around for an accelerator. The company announced it has reduced prices on its line of PCI graphics accelerator boards by up to 30 percent.

The 4- and 8-Mbyte versions of the MGA Millennium, introduced in January (see 01.08.96, Page 20), fell to $449 and $748, respectively, from $649 and $999. According to Matrox, estimated street prices for the boards are now $399 and $679.

The MGA Millennium boards now also feature Sonnetech Inc.'s Colorific calibration software for matching color between the display and the printer.

Matrox Graphics Inc. of Montreal can be reached at (514) 969-6300 or (800) 361-1408; fax (514) 969-6363; http://www.matrox.com. □

Animation

From Page 8

2-D animation tool slated to ship in June.

WebPainter offers traditional bit map-based painting tools that let users create basic shapes, lines of varying widths, patterns and gradients. It includes Pencil, Pen, Smudge and Magic Wand tools. In addition, the program features onion-skinning and multiple-cel-editing controls.

The WebPainter program creates content in a variety of formats, including JPEG, PICT, GIF89a, GIF and the company's Sizzler streaming-animation format.

A public beta is available now; the final version will cost less than $99, Totally Hip said. The shipping version will include tutorials, a manual, Sizzler plug-ins for Mac and Windows machines, sample animations, and clip art.

Dimension X of San Francisco can be reached at (415) 243-0900; fax (415) 243-0997; liquidmotion-sales@dimensionX.com; http://www.dimensionx.com.

Totally Hip Software Inc. of Vancouver, British Columbia, is at (604) 685-6525; fax (604) 685-4057; info@totallyhip.com; http://www.totallyhip.com. □

Liquid Motion's drag-and-drop interface lets users control animations with spline-based motion paths. A Motion Engine API adds support for custom behaviors.

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Java brews Web server

ExpressO written in Sun's language

By James Staten

Sun Microsystems Inc.'s Java programming language has spawned a new competitor in the Internet server arena. Innovative Desktop Inc. next month will ship a standalone Web server written entirely in the new language.

ExpressO, currently in beta testing and slated to ship this summer for $195, will be a full-featured Web server. Thanks to Java's platform independence, ExpressO will run on the Mac OS, Unix, OS/2, and Windows 95 and NT.

Innovative Desktop said it has extended the Java class library to create the desktop application.

ExpressO will fully support HTTP (Hypertext Transport Protocol) 1.0 and feature built-in image-map handling as well as its own scripting language. While the software will not directly support CGIs (Common Gateway Interfaces), users will be able to extend ExpressO's capabilities by writing new server procedures in Java.

To track server performance, visitor information and activities, and errors, the server will generate logs that comply with the log file standard from CERN, the European Laboratory for Particle Physics, and NCSA, the National Center for Supercomputing Applications. Administrators will be able to customize and export logs.

Security will be managed through a graphical interface that lets administrators add users, assign passwords, create groups and secure portions of the server. Remote control and configuration will also be enabled.

Other features will include remote administration, caching, a server-to-server protocol that lets multiple ExpressO servers interoperate, and URL (uniform resource locator) redirect.

The company said ExpressO will provide performance on par with most Web servers written in C; its execution will vary depending on the Java Virtual Machine used and whether a just-in-time (JIT) compiler is present.

A $69.95 Lite version will lack support for server procedure add-ons and will include limited security functions. A programmers kit for extending the server's functions will cost $39. A server construction kit with ExpressO's source code will ship in August for $595.

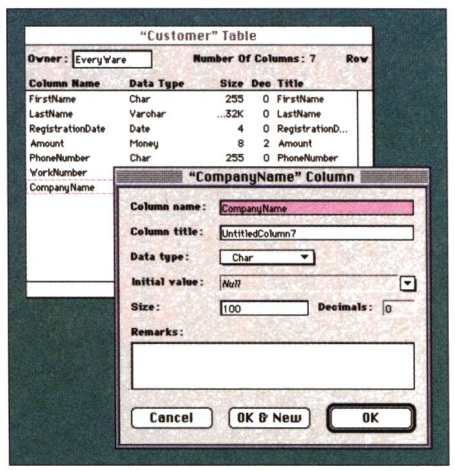
Innovative Desktop Inc. of Camphill, Pa., can be reached at (717) 730-7212 or (800) 730-7213; chuckr@postoffice.ptd.net; http://www.capitalcity.com:4321. □

Butler SQL update adds ODBC drivers

By Clifford Colby

EveryWare Development Corp. last week shipped Version 2.0 of its Butler SQL database, which now provides industry-standard hooks to other applications.

Butler SQL 2.0 includes Open Database Connectivity (ODBC) drivers for connecting 680x0 Mac applications as well as 16- and 32-bit Microsoft Windows applications to its databases. The company said a Power Mac ODBC driver will ship in June.



Among the additions to EveryWare's Butler SQL 2.0 is a native version of ButlerTools, which helps developers set up databases.

A series of ODBC AppleScript extensions let users access Butler using any Open Scripting Architecture-compliant scripting language.

Version 2.0 also features an improved query optimizer and support for Alter Table statements.

EveryWare said it also improved the process of backing up and restoring Butler databases.

The included ButlerTools suite of database-creation tools is now native, the company said, and the

See Butler, Page 14

Better Navigator bookmarks

By Marty Cortinas

Shareware developer Alco Blom hopes to make the Internet easier to navigate with the release of URL Manager Pro. The latest update to this bookmark management utility brings tighter integration with Netscape Navigator, letting users create custom menus in the Web browser's menu bar. Bookmarks within the custom menus can be edited by dragging and dropping.

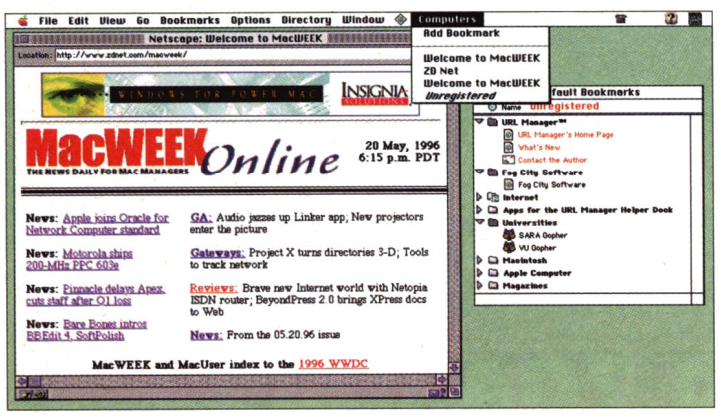
URL Manager Pro distinguishes among Web, FTP, e-mail and newsgroup bookmarks, displaying the various URLs (uniform resource locators) with distinctive icons.

When a text or HTML file is dragged into URL Manager Pro, the utility looks for embedded URLs or e-mail addresses and creates bookmarks for them.

Bookmark files can be imported from Navigator, Peter Lewis' Anarchie and Dartmouth College's Fetch; lists can be exported as HTML.

URL Manager Pro is priced at $25. A non-Pro version that cannot create custom menus costs $15.

Alco Blom can be reached in Amsterdam at 31-20-624-2370; alco@xs4all.nl; http://www.xs4all.nl/~alco/.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MacWEEK and MacUser index to the 1996 WWDC

URL Manager Pro lets users create custom menus in Navigator, such as the Computers menu shown here. Icons identify URLs by type.

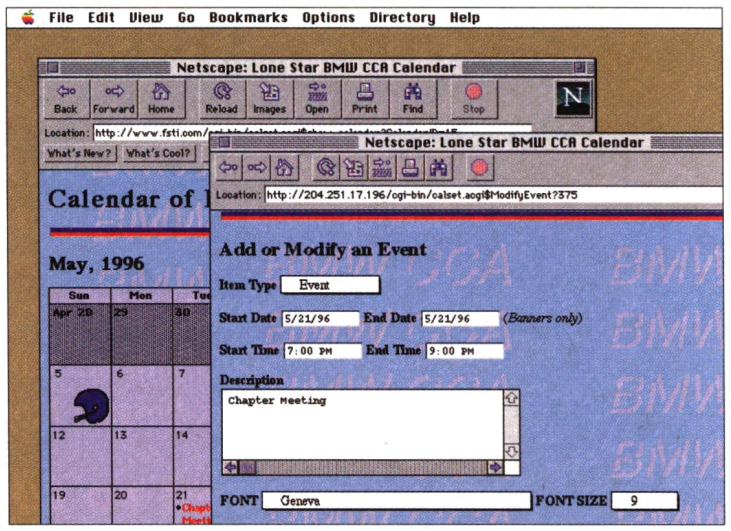
Foresight to post Web calendars

Users can update through browser

By James Staten

Web site administrators who wish to publish a schedule of events that can be modified remotely may want to mark their calendars for a new cross-platform solution from Foresight Technology Inc.

CalendarSet/CGI, priced at $149 and due to ship in June for Macs, Power Macs and Microsoft Windows machines, will be an asynchronous Common Gateway Interface (CGI) built in ACI US Inc.'s 4th Dimension database. Foresight said the software will let users publish an unlimited number of calendars without having to write HTML code. It will display each calendar as an image map, HTML table or list. Every event will include a link containing details about the event or a connection to a related Web site.



Foresight's CalendarSet/CGI will let users publish calendars on the Web that can be edited by anyone with security clearance and a Web browser.

Users will be able to add or modify events via an HTML form. It will also let them password-protect viewing and editing functions on a per-calendar basis.

Administrators will be able to add style to their calendars without writing HTML. Foresight

See Foresight, Page 14

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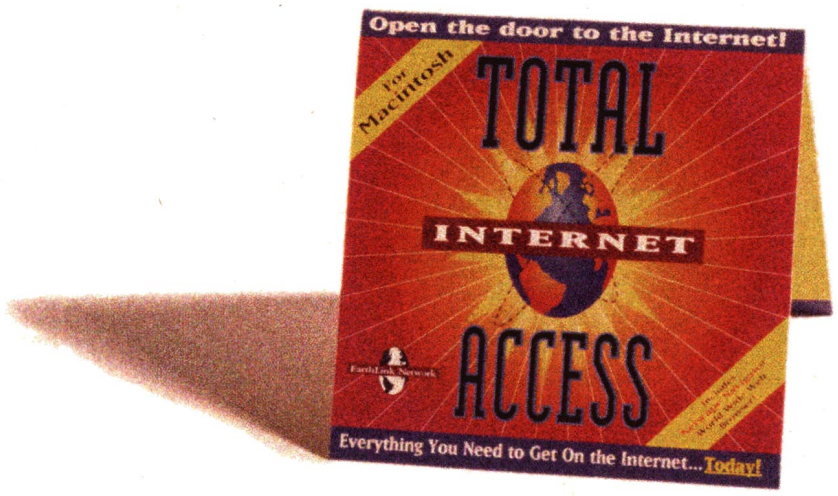

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Developers get Linux for PPC

By James Staten

Apple last week brought out Developer Release 1 of MkLinux, a freely distributable Power Mac version of Unix.

Working with the Open Software Foundation (OSF), Apple ported the popular Microkernel Linux, or MkLinux, which runs on the OSF Mach Microkernel, to the PowerPC. As announced in February, Developer Release 1, or DR1, supports only NuBus-based Power Macs; Apple said a version for PCI Power Macs will follow.

Apple said attendees of Linux sessions at the Apple Worldwide Developers Conference earlier this month in San Jose, Calif., will receive a free copy of DR1. Others can order the CD-ROM for $10 from Prime Time Freeware, an online distributor at http://www.ptf.com.

The final release of MkLinux is due in September. Prime Time will sell the finished version for $50.

Updates and patches for MkLinux will be posted to http://www.mklinux.apple.com.

Prime Time Freeware of Sunnyvale, Calif., can be reached at (408) 433-9662; fax (408) 433-0727; info@ptf.com. □

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Butler

From Page 12

documentation for Butler has been revised and expanded.

Pricing for Butler SQL 2.0 ranges from $695 for five concurrent users to $1,995 for an unlimited-user license. Version 1.5 owners can upgrade free; otherwise, the update costs $395.

Tango, the company's $495 Common Gateway Interface for linking databases to a Web server, is no longer included with Butler SQL. At the Apple Worldwide Developers Conference in San Jose, Calif., this month, EveryWare announced that Tango now supports a wider range of databases, including Claris Corp.'s FileMaker Pro.

EveryWare Development Corp. of Mississauga, Ontario, can be reached at (905) 819-1173 or (800) 819-2500; fax (905) 819-1172; sales@everyware.com; http://www.everyware.com. □

Foresight

From Page 12

said the CGI will provide custom headers and footers that users can modify to reflect their organization's style. It will also let them add background colors, specify event and banner colors, or set the background color to transparent. They will be able to add a series of navigation buttons through a pop-up list.

CalendarSet/CGI will compete with Now Software Inc.'s $299 Now Up-to-Date Web Publisher, which lets users publish calendars directly from Now Up-to-Date (see 04.15.96, Page 6). Web Publisher provides similar display options but cannot let users edit calendars remotely. It does, however, give users the ability to move events from Web-based calendars directly to their Up-to-Date files.

Foresight Technology Inc. of Fort Worth, Texas, can be reached at (817) 731-4444 or (800) 701-9393; fax (817) 731-9304; http://www.fsti.com. □

Vicom ships Internet router for small offices

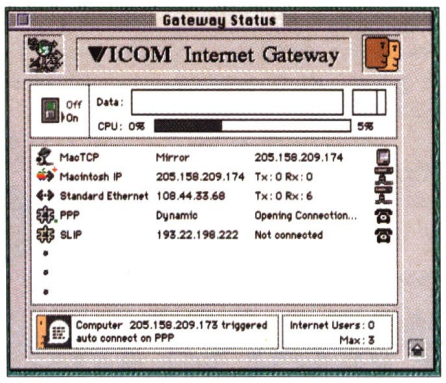
By Clifford Colby

Vicom Technology Ltd. last week shipped a lean version of its modem-sharing tool for making the most of a single Internet account.

The company's $149 Internet Gateway for the Small Office acts as a router between Macs and the Internet and lets two users share one modem and one TCP/IP address over either a Serial Line Internet Protocol or Point-to-Point Protocol connection. Administrators can set limits on connection times and length of inactivity and bar access to specific sites.

An add-on for sharing an ISDN connection costs $149. Additional simultaneous users can be added for $50 each; 10- and 20-user licenses are $300 and $500, respectively. The full version of Internet Gateway, priced at $399, lets five users share one modem or ISDN pod.

Vicom Technology Ltd. of Stockton, Calif., can be reached at (916) 686-1964 or (800) 818-4266; fax (916) 686-1194 or (800) 889-7235; sales@vicomtech.com; http://www.vicomtech.com. □



Vicom's Internet Gateway for the Small Office lets users share a modem and Internet account.

Dayna releases 100-Mbps bridge

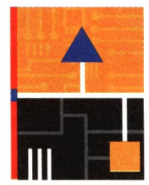
By Joanna Pearlstein

Dayna Communications Inc. put printers and laptops on the fast track this month when it shipped a Fast Ethernet bridge for these devices.

The $475 BlueStreak Fast EtherPrint 10/100 bridge connects a 10BASE T printer to a 100-Mbps Ethernet network; it can also be used to connect mobile users to a 100BASE T backbone. About the size of two cigarette packs, the bridge has an RJ-45 jack for 100BASE T and 10BASE T connections and LED indicators for link, receive and transmit signals.

Dayna Communications Inc. of Salt Lake City can be reached at (801) 269-7200 or (800) 531-0600; fax (801) 269-7363; http://www.dayna.com. □

NETWORK TRAFFIC



- **Adapting ISDN**
- **Talking traffic on the Web**
- **Power tools**

Sat-Sagem of Cupertino, Calif., is now shipping the $495 Sagem Planet ISDN GeoPort Adapter, a dual-channel ISDN terminal adapter that uses Apple's GeoPort serial technology (see 03.18.96, Page 1). The GeoPort ISDN Adapter can transmit data at speeds up to 128 Kbps when both B channels are combined. … Alameda, Calif.-based **Lundeen & Associates** released Version 1.2 of its $395 Web Crossing conferencing software. Web Crossing lets users read and contribute to public or private discussions via a Web browser. The new version adds full-text search, supports moderated discussions and improves performance. … **Computer Systems Advisers Inc.** of Woodcliff Lake, N.J., is shipping a Power Mac version of its cross-platform data-modeling software, Silverrun-Enterprise. The tools suite is also available in a 32-bit Microsoft Windows version and begins at $2,500. … Digital nomads can look to Fremont, Calif.-based **NovaLink Technologies Inc.**, which has unleashed the NovaModem 288 for Macintosh, a 28.8-Kbps PC Card fax modem. The $299 NovaModem supports the MNP-10 and MNP-10EC protocols for cellular transmissions. … Meanwhile, **Eiger Labs Inc.** of Sunnyvale, Calif., is shipping a cellular-capable fax modem for PowerBooks. The V.34 Cellular Data/Fax modem can transmit data at speeds up to 28.8 Kbps and comes on a Type II PC Card; it has an estimated street price of $249. … **ADC Kentrox** is selling an ISDN and Frame Relay router, the Pacesetter. The Portland, Ore., company's new offering has one 10BASE T port, one ISDN Basic Rate Interface and one configurable high-speed WAN port. Pricing begins at $1,195. □

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Mac OS

yes

Speed demons put pedal to the metal

By April Streeter

The promise of true 100-Mbps throughput remains elusive, but users will try anything.

A handful of high-speed network technologies are ready for use on Macintosh LANs, but beware: None of the choices can guarantee Mac users even close to the 100-Mbps throughput theoretically available.

In all areas where the Mac excels, and especially in pre-press and multimedia, improving network performance is a constant challenge. Currently, four technologies — 100BASE TX, 100VG-AnyLAN, Fiber Distributed Data Interface/Copper Distributed Data Interface (FDDI/CDDI) and Asynchronous Transfer Mode (ATM) — are vying to help Mac managers appease the speed demons.

All four technologies offer capacities of 100 Mbps of throughput or more — one version of ATM offers as much as 155 Mbps — by giving networks a larger pipe to carry data than regular Ethernet with its 10-Mbps limit.

Signaling speeds of these faster networks are higher, which means it takes less time to transmit packets, and a larger number of clients can be supported before traffic on the network starts to bog down. In network terms, it's like merging from a two-lane country road to the autobahn.

But as user experiences attest, a tenfold increase in the size of the highway doesn't necessarily make sluggish vehicles move faster.

Mileage may vary

Before making the leap to a fast networking technology, managers may want to look closely at how they expect their networks to grow, then take into account the cost of different high-speed choices, the inherent limitations of the Mac OS and its chatty AppleTalk protocol, and the way the various choices fit into an existing network structure. In some cases, other strategies, such as segmentation, setting up server "farms" or installing a couple of switching hubs, might provide good, but perhaps not long-term, performance improvements.

If price is an obstacle, 100BASE TX is probably the least expensive of the four, with adapters in the $200 to $300 range and hubs priced not significantly higher than Ethernet equipment.

100VG-AnyLAN products fall in a similar range, but only Ragula Systems Inc. of Salt Lake City has developed a Mac PCI card (the NuBus version is still in the works). 100VG-AnyLAN does have the advantage of running on Category 3 unshielded twisted-pair cabling as well as on Category 5, which can save some users from paying for wire replacement.

Mac adapters for FDDI/CDDI, available from vendors such as SysKonnect Inc. of San Jose, Calif., are still about twice as much as either 100BASE TX or 100VG-AnyLAN. The ATM PCI and NuBus adapters, from vendors such as Fore Systems Inc. of Warrendale, Pa.; Interphase Corp. of Dallas; and soon, Newbridge Networks Inc. of Herndon, Va., are two to four times more expensive than 100BASE TX.

Of the four high-speed choices, 100BASE TX is currently enjoying the most attention and success. A score of vendors, including Dayna Communications Inc. of Salt Lake City; Digital Equipment Corp. of Maynard, Mass.; and Farallon Computing Inc. of Alameda, Calif., are shipping PCI or NuBus versions of the adapters needed to make Macs part of a 100BASE TX network, and the overall market is booming.

Last year, 100BASE TX adapter shipments totaled about 665,000 units, according to figures from International Data Corp. of Framingham, Mass. That's 25 percent more than IDC originally estimated would sell in 1995. And while IDC LAN analyst Justin Smith hasn't released his sales projections for 1996, he said the market "is going like gangbusters." Smith attributed some of the sales strength to vendors' strategy of selling two-in-one adapters that accommodate regular Ethernet as well as 100BASE TX, which stimulates sales to sites that aren't really migrating upward.

100BASE TX outsold its closest competitor, the Hewlett-Packard Co.-developed 100VG-AnyLAN technology, by a margin of 3-to-1 last year, and Smith predicted that sales margin will widen to about 10-to-1 this year. Smith said he believes 100VG-AnyLAN can still have long-term market viability; however, he said competition among the high-speed contenders curbs the appeal of FDDI/CDDI. While FDDI and CDDI have been around longer and are considered more stable than the other choices, the products don't compete on price.

"The way the market's going limits FDDI's potential at the desktop," Smith said. "It will still sell, but I think as a backbone rather than a desktop technology, and perhaps in places where bomb-proof networking is required."

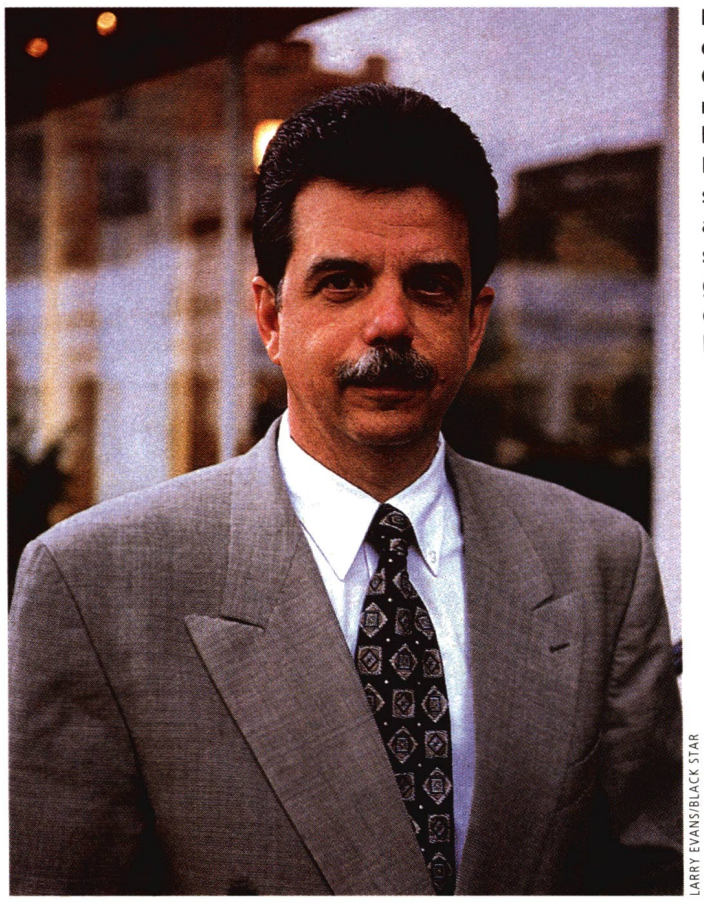
At the Spiegel Catalog Co. in Downers Grove, Ill., CDDI was chosen for Mac desktops expressly because FDDI was already the company's backbone solution.

"Spiegel really needed some speed," said Frank Brunacci of Flying Colors Graphics Inc. in Downers Grove. "The Macs had a lot of network traffic, AppleTalk was creating lots of chatter and there were tons of printing jobs constantly going on. FDDI was already there, and we needed to find something that would fit with it."

Brunacci implemented Spiegel's high-speed Mac LAN and said the unrelenting pace in the production department meant the company didn't have time to mess with anything but a rock-solid solution. CDDI has reliability to recommend it: It runs on the company's existing Category 5 wiring and fits in with the backbone topology.

Now five Flying Colors employees provide ongoing support to the 160 Macs in Spiegel's creative production department,

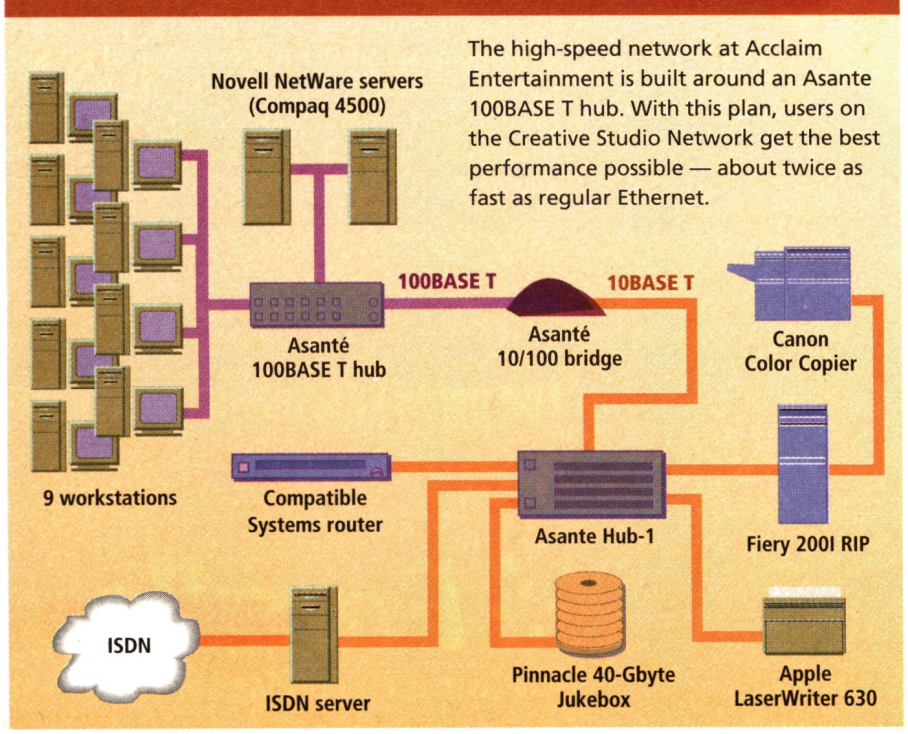
See Speed, Page 18



LARRY EVANS/BLACK STAR

Frank Brunacci of Flying Colors Graphics implemented Spiegel's high-speed Mac LAN. He said users always adjust to whatever speed they are given, then eventually start looking for more.

Acclaim Entertainment's 100BASE TX network



The high-speed network at Acclaim Entertainment is built around an Asante 100BASE T hub. With this plan, users on the Creative Studio Network get the best performance possible — about twice as fast as regular Ethernet.

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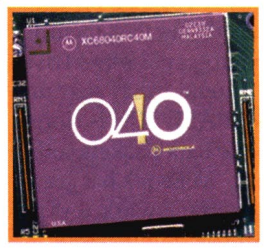

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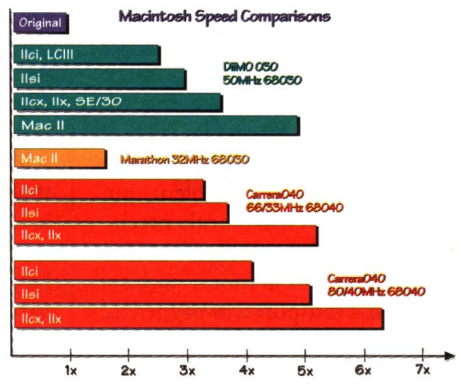

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Macintosh SE/30	w/o FPU	ORDER#	w/FPU	ORDER#
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Macintosh LCIII	w/o FPU	ORDER#	w/FPU	ORDER#
DiiMO 030 50MHz 68030	$199.99	#79087	$249.99	#79088

68040/030 LC and LCII Accelerators...*Break the 10MB Barrier!*

68030 from $99

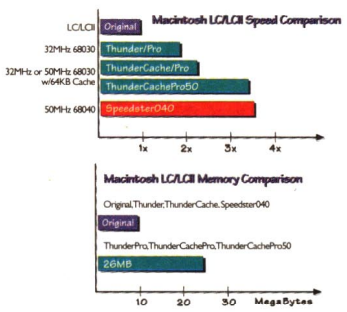
MicroMac's Thunder accelerator boosts the performance of your LC or LCII with a fast 32MHz 68030 CPU. This entry level model comes with an FPU. The MicroMac ThunderCache accelerator combines the pure speed of the 32MHz 68030 CPU with an ultra-fast 32KB cache memory. The optional 32MHz FPU makes working with spreadsheets and graphics a breeze.

68030 from $199

The ThunderPro and ThunderCachePro accelerators are the same as the Thunder and ThunderCache accelerators with the addition of four SIMM slots to break the limiting 10MB RAM barrier associated with the LC and LCII. They let you upgrade your memory up to 26MB. The ThunderCachePro is also available at 50MHz for more speed.

68040 from $299

The MicroMac Speedster040 accelerators offer impressive Quadra performance for your LC or LCII with a 50/25MHz 68040 CPU and optional FPU.



Macintosh LC	w/o FPU	ORDER#	w/FPU	ORDER#
Thunder 32MHz 68030			$149.99	#69219
ThunderCache 32MHz 68030 w/32KB Cache	$199.99	#69220	$249.99	#69221
ThunderPro 32MHz 68030 w/4 SIMM Scks	$199.99	#69222	$249.99	#69223
ThunderCachePro 32MHz 68030 w/32KB Cache & 4 SIMM Scks	$249.99	#69224	$299.99	#69225
ThunderCachePro 50MHz 68030 w/32KB Cache & 4 SIMM Scks	$249.99	#69226	$299.99	#69227
50/25MHz Speedster040	$299.99	#79079	$399.99	#79080

Macintosh LCII (Performa 4xx)	w/o FPU	ORDER#	w/FPU	ORDER#
Thunder 32MHz 68030			$149.99	#69228
ThunderCache 32MHz 68030 w/32KB Cache	$199.99	#69229	$249.99	#69230
ThunderPro 32MHz 68030 w/4 SIMM Scks	$199.99	#69231	$249.99	#69232
ThunderCachePro 32MHz 68030 w/32KB Cache & 4 SIMM Scks	$249.99	#69233	$299.99	#69234
ThunderCachePro 50MHz 68030 w/32KB Cache & 4 SIMM Scks	$249.99	#69235	$299.99	#69236
50/25MHz Speedster040	$299.99	#79083	$399.99	#79084

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Speed

From Page 16

and Brunacci said CDDI cards from SysKonnect perform trouble-free. While he was reluctant to supply CDDI's performance benchmarks, he said he thinks Spiegel's Mac users are satisfied.

"People acclimate to whatever speed you give them, and after a while they start to project a need for more than they've got," Brunacci said. For the moment, however, CDDI "is a win, and the way you can tell is that people who don't yet have CDDI definitely want it."

Better, if not best

Scott Jenkins, network manager at software game developer Acclaim Entertainment Inc. of Glen Cove, N.Y., is an enthusiastic booster of 100BASE TX as a high-speed winner. He's had Asanté Technologies Inc.'s Asanté-Fast 10/100 adapters for both NuBus and PCI Macs since beta versions were available, and he has been working with 100BASE TX for almost a year.

In providing better performance to his ever-hungry developer-users, Jenkins looked for the best speed at the lowest price. As the company moved to a new location last year, he knew he would be working with Category 5 unshielded twisted-pair cabling, which is highly recommended for 100BASE TX implementations. Thus, while Jenkins said he spent time and money making sure the new cabling was properly terminated, he didn't agonize over which high-speed technology to choose. At that time, 100VG-AnyLAN and ATM products weren't yet available for the Mac, and he said that he felt FDDI/CDDI was prohibitively expensive, leaving 100BASE TX as the logical choice.

"Do you know of any other cost-effective way to get more speed to my high-end users?" Jenkins asked. "If all I have to do to deliver better performance to my users is change the hubs and adapters, well, you can bet I'm going to do it."

Jenkins did some casual benchmarking after installing the Asanté equipment, and he said that even PCI-equipped Macs on the 100BASE TX network aren't breathtakingly fast and achieve nowhere near the technology's theoretical 100-Mbps limit. Even updates to Apple's Open Transport network infrastructure haven't translated into large performance gains. All told, Jenkins said speed on his 100BASE TX network is just about twice as good as regular Ethernet.

"100BASE TX doesn't work as well as you'd like it to, not even on PCI [Macs]," he said. "But performance is better, better than it used to be, and for us, time is money. If you can double your throughput on the network, that means you are getting some aspect of your work done twice as fast, and at some point that translates into real savings."

Since 100BASE TX is taking most of the high-speed LAN market, the contenders differentiate themselves by pointing out TX's weaknesses. 100VG-AnyLAN's capability to avoid packet collisions, by its use of a priority demand scheme, is viewed as a prime distinction.

Counting collisions

Oliver Yaeger, a network consultant with Ahnemann Kunze Daten Teknik GmbH of Bremen, Germany, has tested Ragula's 100VG-AnyLAN adapters for the Mac and recently installed them at Milzarek GmbH, a reprographics business also in Bremen.

"I tend to say that using Fast Ethernet [100BASE TX] is simply the best way to make data packets collide faster," Yaeger said. "Milzarek has got a lot of traffic going over the network, and their Mac machines were certainly suffering from collision problems, but with VG-AnyLAN there have been no collisions."

But Yaeger was direct about the lack of performance gains at Milzarek and the other site where he installed 100VG-AnyLAN. "The fact is, 100VG is not much faster than Ethernet," he said. "With Ethernet, the Macs got 600 to 800 Kbps; now they are getting 800 to 900 — perhaps 1.2 Mbps at peak. That's a bit better, but it's not a blast of speed."

Behind the performance problem, for 100VG-AnyLAN as well as the other technologies, lie a number of bottlenecks. NuBus has inherent limitations, and on PCI Macs, Open Transport was pegged as a significant performance barrier on high-speed networks.

Garry Hornbuckle, director of technology services for Apple's Developer Technical Services, said he thinks that's no longer the case, however. "If customers complain about OT 1.1 performance," he said, "we believe they are actually complaining about 'system services' performance." Hornbuckle said that system services are still 680x0-based and won't derive speed benefits when performing network tasks until the Copland OS release.

> "If all I have to do to deliver better performance ... is change the hubs and adapters, well, you can bet I'm going to do it."
>
> — *Scott Jenkins*

Sanch Datta, vice president of engineering at Ragula, said the company is working on driver software for 100VG-AnyLAN cards that will bypass Open Transport to deliver better speeds to PCI Macs. In the meantime, lowering the incidence of collisions and expanding the network's capacity will make a noticeable difference for sites that choose 100VG-AnyLAN.

"If you have a congested net, you will see improvement," Datta said. "That's what we are marketing."

Keep the options open

ATM has one inherent quality that gives it great potential for high-performance, multimedia Mac users: It can handle network data traffic at the same time as video and voice data streams. However, it remains to be seen how applications talk to the ATM network to manage this interplay.

In the meantime, some of the same problems plague forerunners intent on setting up ATM solutions. Jim Coffin, project manager at XRE Corp. of Littleton, Mass., is in the process of designing a Mac-based solution for archiving cardiac angiograms. XRE manufactures a custom image-processing system for angiograms, which are something like a video clip of the human circulatory system.

A Mac serves as the cardiologist's interface to these clips and also, XRE hopes, as the gateway machine to other computers on a hospital's network. But after testing Fore Systems' PCA-200EMAC PCI Bus ATM adapter, XRE was disheartened.

"We needed high bandwidth that would enable the Mac to transfer the large angiogram files, and we aimed for at least 5 Mbps of dedicated bandwidth," Coffin said. Instead, he said they got a maximum of about 2.5 Mbps. "Performance of the Mac [with the Fore Systems adapter] was disappointing, to say the least," he said. "It was underwhelming. We still have the cards, and I think the hardware is stable, but it's not clear that we can base our solution on ATM."

XRE is going ahead with the first installation of one of its systems, including a Mac client machine, in Children's Hospital in Boston, but without a network connectivity component.

"We'll be looking at FDDI," Coffin said. "We're going to do some tests; maybe we can do multiple 100BASE TX links. I think our problem is not insurmountable, but I think Apple is behind the eight ball as far as ATM is concerned. I hope they keep working on Open Transport, as that's what tied us up."

Here and now

Vendors are aware that users setting up high-speed Mac LANs are bound to be disappointed if they expect to see performance throughput that goes far beyond a single digit. To that end, vendors are not only encouraging development of native Open Transport applications but also writing their own utilities, such as Asanté's recently released NetDoubler, to speed important network transactions such as file transfers.

In the meantime, users such as Acclaim's Jenkins think some speed improvements are worth the price of buying into a 100-Mbps technology.

"Open Transport is stable and functional, and it's only going to get better," Jenkins said. "Plus, the end users always appreciate any performance improvements you throw their way." □

Open to interpretation

Vendors of 100-Mbps adapter cards put the blame for the Mac's lack of zip in high-speed networks on Open Transport 1.1. Apple counters by implying that Open Transport is up to snuff and it's the vendors' own Mac drivers that must be tweaked. Who is right? They both are.

Open Transport's chief virtue is that it lets users easily bounce among different network protocols, providing a foundation for Power Macs to get better performance on a network than a Mac connected via AppleTalk. In addition to its renowned chattiness, AppleTalk's maximum datagram size is smaller than that supported by TCP/IP or IPX, which are in turn smaller than those that could run in FDDI or ATM networks.

Consider the caveats, however, of getting the best out of Open Transport: The network applications must be native Power Mac versions and must also support Open Transport's APIs, the adapter card drivers must be optimized for

DAVE EMBER

the latest version of Open Transport, and the Mac's system services must be overhauled so they don't rely on AppleTalk APIs.

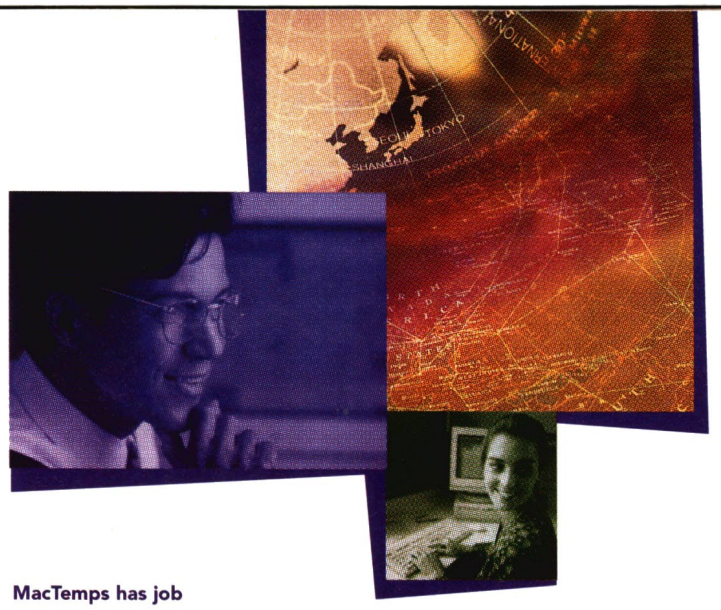
Garry Hornbuckle, director of technology services for Apple's Developer Technical Services, said he's heard nothing but good news from developers since Open Transport reached Version 1.1. Interphase Corp. of Dallas, for example, clocked a Power Mac 9500/132 with its ATM card at 93 Mbps.

"However, there is still a big 'but,' and it's one we've talked about before," Hornbuckle said. "To do this, you've got to have PowerPC-native, OT-native applications."

And even if drivers get snappier and Open Transport keeps improving, managers will have to realize that the most popular protocols they are now using — AppleTalk, MacIPX and MacTCP — weren't designed for higher-speed environments.

Oliver Yaeger, network consultant at Ahnemann Kunze Daten Teknik GmbH in Bremen, Germany, said the driver software for these high-speed technologies "is not all that good, and it doesn't run all that well with Open Transport. What I'd rather talk about is the possibility of the next protocol generation. I hope something is developed that can deliver the ease of use of AppleTalk, the flexibility of TCP/IP and the performance of IPX."

— By April Streeter



MacTemps has job openings all over the country. Here are just a few:

Help Wanted

technical positions available

Atlanta, GA

Director Programmer
Short term assignment in metro Atlanta. Knowledge of Lingo programming in Director, XPress and Illustrator.
Job# 6543 **$21/hour**

Technical Support
Short term assignment which requires troubleshooting Mac hardware and System 7.5.
Job# 6539 **$18/hour**

Database Developer
Filemaker Pro 3.0 assignments. Knowledge of scripts and buttons are a must. Requires at least two years of prior experience.
Job# 6535 **$15/hour**

Boston, MA

Web Designers/Masters
Java, HTML, CGI, Quicktime, Shockwave, other video/audio web & multimedia technologies. 2-5 years in graphic design with an agency. UNIX helpful.
Job# 13870 **$18-$30/hour**

Multimedia/ New Media/ Interactive Specialists
Macromedia Director (Lingo expert), Shockwave, 3D modeling, VRML, GUI, interactivity (user controlled media/scored tests, etc.) a must. CD-ROM development experience too.
Job# 13870-1 **$20-$35/hour**

Chicago, IL

Technical Support
Upgrade project from Windows 3.1 to Windows '95. Software upgrade, inventory.
Job# 10233 **$15-17/hour**

Cleveland, OH

Lingo Programmer
Lingo programmer with graphic design and/or authoring, animation, 3D modeling, audio and video knowledge. Experience in Photoshop, Director and IconAuthor is required. Programmers with C++, Visual Age or equivalent are also needed.
Job# 844 **$15/hour**

Support Specialist
Software support specialist is needed to handle a Mac and PC environment. Knowledge of MS Office Suite as well as a few graphics packages are required. (i.e. XPress and PageMaker) This position is via phone and would provide support for 200 end-users.
Job# 752 **$14/hour**

Dallas, TX

Help Desk
Macintosh Help Desk candidate is needed for a perm position in Dallas. You must have strong Macintosh, hardware and software, and excellent customer service skills.
Job# 4855 **$10-12/hour**

Denver, CO

Project Technicians
3-4 techs needed to test software localization project, verifying programs, working with translation specialists.
Job# 4441 **$15/hour**

Denver, CO (cont.)

Database Administrator
MS Access expert to design and tweak existing database, standardize data, perform queries, customize & generate reports.
Job# 4415 **$20/hour**

Programmer
Recoding application developed in MS Visual C++ for Windows to C++ on the Mac. Need to know C++ and toolbox & be able to work with Microsoft Visual C++ code.
Job# 4414 **$45/hour**

Detroit, MI

Help Desk Assistant
Support end users at schools using client's custom Internet access software. Assistance provided over the phone.
Job# 6716 **$10/hour**

Database Programmer
Complete redesign of a 4D database. Add procedures, write scripts.
Job# 7142 **$25/hour**

Technical Support Personnel
Mac/PC network. Troubleshooting printing and software problems.
Job# 6820 **$25/hour**

Houston, TX

Technical Support
Work for a "Big Six" accounting firm. Mac platform, troubleshoot h/w, s/w, work with PowerBooks. Some DOS/Windows. Support MS Office and TCP/IP.
Job# 3667 **$30-35K/year**

Technical Support
Nationwide company is looking for Macintosh/PC technical support specialist. Must be familiar with Novell networking and experience with Macintosh end user support.
$20-25/hour

Los Angeles, CA

Technical Support
For Creative Services dept. Maintain, troubleshoot Mac & Windows machines. Work with scanners, Fiery printers, multimedia, the Web, A/V systems. Need graphics skills.
Job# 15361 **$20-25/hour**

Technical support
General h/w, s/w installation and maintenance. Strong Mac and PC knowledge. Networking a plus.
Job# 15180 **$17-20/hour**

Technical Support
3 years experience supporting office environment. Maintain mostly Mac network. Backup procedures, LAN/WAN experience helpful.
Job# 15420 **$18-25/hour**

Technical Support
In Creative and Admin. depts of architectural design firm. Support AutoCad, Networking, UNIX, graphic design software. Fast paced environment.
Job# 15399 **$18-25/hour**

Irvine, CA

Macintosh Programmer
MS solutions provider needs work on comm part of their application. C++ & Applescript. File transfer, management for PC/Mac & Mac/Mac conversion. Comm toolbox a must. FoxPro helpful.
Job# 3791 **$30-120/hour DOE**

Miami, FL

Systems Engineer
Systems Engineer is needed to help support a prepress environment. Qualifications include strong customer service, prepress experience, knowledge of networking (Appletalk & Ethernet), solid Macintosh skills and ability to troubleshoot all computing issues.
$17/hour

Minneapolis, MN

Lingo Programmer
The rapidly growing multimedia development community of Minneapolis is in need of Macromedia Director Lingo and C++ programmers. Candidates must be able to hit the ground running and produce code with little ramp up time. Sample of previous work is a must.
$25/hour

Philadelphia, PA

Lingo Programmer
Work in Director for consulting firm.
Job# 5525 **$23/hour**

PC Systems Specialist
Basic troubleshooting. Networking experience helpful.
Job# 5480 **$15/hour**

Help Desk/Product Support Specialist
Mac & Windows, handle service requests over phone, assess need for in-person solution.
Job# 1083 **$21-24K/year**

Help Desk/Product Support Specialist Team Leader
Mac & Windows, monitor service requests in the call center.
Job# 1083 **$28-32K/year**

Translation Engineer
Mac & Windows. Program software localization utilities. Compile international s/w packages. Borland, Amiable RLM and Res Edit.
Job# 1083 **$30-35K/year**

Quality Assurance Manager
Mac & Windows, work closely with engineering to ensure quality of product. Maintain, fix and generate OEM software.
Job# 1083 **$30-35K/year**

Phoenix, AZ

Network Consultant
Banyan Vines 5.5.4. Need to maximize transfer rates for Mac-Mac, Mac-PC and Mac-UNIX. Need consulting on best software for the job.
Job# 1059 **$25-40/hour DOE**

Mac Programmer
Aircraft simulation game. Think C and HyperCard for Mac. Debug during final testing. 3D Audio, Focal Point. Stats background needed as s/w collects data for research project.
Job# 1053 **$30-50/hour**

Technical Support
For pre-press, h/w and s/w support. QuarkXPress, PageMaker, Illustrator, FreeHand, Photoshop & MS Office. Appleshare, EtherNet, other network experience a plus. Relocation considered.
Job# 1057 **$17-20/hour**

Parsippany, NJ

Mac Programmer
Working in C for Mac creating video data application. Software will be converted later for non-Mac OS and localized for Arabic.
Job# 3259 **$30-50/hour**

Technical Support
Support for Windows 3.1, FileMaker Pro 2.1, and Excel 5.0. Excellent communication skills are required. Must be able to work in a fast paced, team environment.
Job# 29554 **$20-25/hour**

New York, NY

Systems Generalist
Mac network. Large Ethernet LANs. UNIX, Netware, cc:Mail, and MS Office required.
Job# 10074 **$25/hour**

New York, NY (cont.)

Help Desk
Tier 1 support for large publishing house. Quark, Illustrator, Photoshop & general h/w and peripherals issues.
Job# 8653 **$22/hour**

San Diego, CA

Database Administrator
Progressive multimedia firm needs experienced 4D programmer.
Job# 4031 **$20-30/hour**

Lingo Programmer
Director professionals with 1+ years professional experience with Lingo. SQL or database experience a plus.
Job# 4051 **$15-25/hour**

San Francisco, CA

Network Specialist
Must have detailed knowledge of horizontal wiring, bridges, routers, hubs, WAN connections, operations, maintenance functions and good troubleshooting abilities. Swing shift 3PM-11PM!
Job# 5575 **$17/hour**

Technical Support
Perform software upgrades, install new applications, order and upgrade new systems, provide preventative maintenance, administer Retrospect back up system, investigate and participate in computer training courses, and evaluate and test new products.
Job# 6705 **$17/hour**

System Specialist
Support the staff designers with both applications and hardware. Must be proficient with Photoshop, Illustrator and FreeHand and have a good understanding of business processes. Qualifications are at least five years on the Macintosh and cross platform experience is desired.
Job# 6080 **$18/hour**

Technical Support
Service request issues, troubleshoot Macintosh, PC and UNIX platforms, install hardware and software, conduct user training, handle networking issues, and arrange for repairs when necessary.
Job# 6365 **$17/hour**

Visual Basic Programmer
Develop a decision analysis program which has already been started. Qualifications include at least 3.5 years experience with 1-2 years of Visual Basic programming required.
Job# 6678 **$18-25/hour**

Systems Administrator
Mac LocalTalk network, linked FileMaker Pro 2.2 & ACT! databases. They want Ethernet, FileMaker Pro 3.0, & dedicated server in future. Manage backups, 401K reporting, report writing for HR consulting firm.
Job# 6422 **$25/hour**

Jr. Programmer
Develop bibliographic database running on 32-bit Windows & Mac. C/C++ for Mac. Toolbox, TextEdit, Script Manager, WorldScript and File Manager. User interface knowledge & cross platform development experience is a plus.
Job# 6608 **$20-30/hour**

Silicon Valley, CA

Field Engineer
PC and Mac installation, repair & maintenance. Hardware and software testing, training & research.
Job# 4055 **$20/hour**

Software Localization Engineer
Localize software for 24 languages. Must have prior experience. Not a development position. Entry-level engineers will be considered.
Job# 4041 **$40K/year**

Silicon Valley, CA (cont.)

MIS/Data Systems Consultant
Consult on and construct a system (networked database or other) so any client station has access all account info for online publishing house. Customers should be able to dial into sales and place orders via the Web. Possible future web site development.
Job# 4000 **$25-50/hour**

Mac Programmers
C/C++, Code Warrior and MPW. Develop comm software. ISDN, modem technology, & comm toolbox a must. 5-6 perm positions including a Sr. Engineer.
Job# 4277 **$50-75K/year**

Mac Programmers
Using C++, Code Warrior and MPW. Multimedia graphics knowledge including QuickTime and QuickDraw required. Drag & Drop. Several long-term openings.
Job# 4284 **$25-60/hour**

Technical Support
2 positions. Support customers using communications software that bridges platform connectivity issues. Internet knowledge needed.
Job# 4286 **$15-17/hour**

Help Desk
A four month contract is available for a help desk technician. Mac experience is a must, but dual platform is desired. Responsibilities include troubleshooting and supporting the company product via the telephone and e-mail. Excellent customer service skills are required.
Job# 4332 **$20-25/hour**

MIS Specialist
MIS Specialist is needed to support 40 users in both a Mac and PC environment. Responsibilities include troubleshooting, training, and end user support. Internet experience is a must.
Job# 4328 **$20/hour**

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BPA INTERNATIONAL

Mac vs. CHRP

It came as no surprise that CEO Gilbert Amelio decided to overhaul Apple's organization. However, his outline of these changes at the Apple Worldwide Developers Conference this month was more than rearranging deck chairs on the Titanic. His vision for the company has the potential to be quite revolutionary and may change the direction in which Apple's CPU designs have been heading since the company signed on to the PowerPC Consortium.

The most provocative change Amelio proposed is his creation of four discrete businesses — Macintosh hardware, Alternative Platforms, Imaging and Information Appliances. He envisions division managers in charge of inventories, market development, and profit and loss. He even went so far as to observe that the different divisions may find themselves competing with one another.

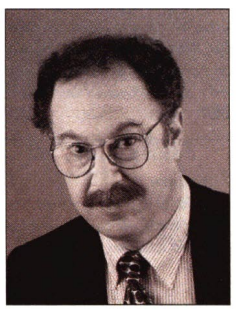
We found it fascinating that Amelio declared the Alternative Platforms division as the home for Apple's PowerPC Platform (PPCP) machines (although he repeatedly called them by the old name, CHRP, for Common Hardware Reference Platform). While Amelio gave no explicit reasons, the logic of moving PPCP out of the mainstream Mac division strikes us as a radical shift in Apple's strategy.

Previously, the company indicated that its future hardware plans would be based on PPCP specifications. While Amelio's sketch of the new organization does not undermine that strategy, Apple gains flexibility by splitting Mac hardware from PPCP systems and letting the marketplace determine which platform it prefers. If PPCP succeeds, over time that division will come to dominate Apple's revenues. If not, the company has not re-engineered its fate around speculative technology.

Apple has been fighting a lonely and punishing market share battle in the name of the PowerPC. It has learned that trying to pave the way virtually by itself can be extremely painful. By hedging his bets on PPCP, Amelio would be playing the same wait-and-see game as IBM Corp. It may prove the only profitable way to make the platform transition. □

THE SECOND DECADE HENRY NORR

If Apple can deliver, future should be bright



The best summary I've heard of what's new at Apple under CEO Gilbert Amelio has only two words: adult supervision. Rather than retreating from any major markets or dramatically changing the company's technology direction, he's aiming to lead Apple out of its time of troubles by bringing order, focus, accountability and common sense to its operations.

That's appropriate, since Apple's travails clearly have more to do with mismanagement than with any technological shortcomings. But I, for one, was also heartened by what I heard at this month's Apple Worldwide Developers Conference about the future of the Mac platform itself. Here are a few items I found especially encouraging:

▸ **AppleScript.** Having finally noticed that a systemwide scripting language is a huge strategic advantage and could be much bigger under Mac OS 8, code-named Copland, Apple is once more putting resources into AppleScript. Look for a native version, other enhancements and a revival of the long-neglected Apple-events registry.

▸ **HyperCard.** HyperCard, too, is slated to rise from the ashes, this time in the form of a QuickTime data type. Among other advantages, that will make it cross-platform at last.

▸ **FireWire.** Apple's schedule for delivering its high-speed serial bus has slipped again — it's now due on PCI cards and on Pippin in 1997 and on desktop and mobile logic boards in 1998 — but at least there's now a detailed road map for implementing it and an evangelist to promote it.

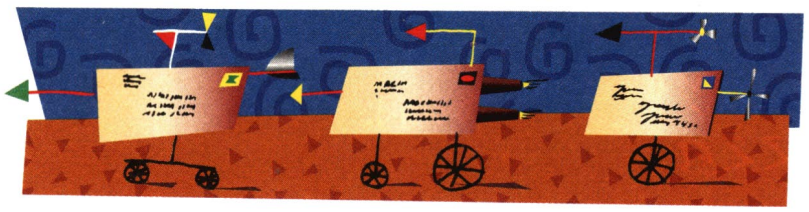
▸ **Java.** Fierce competition among Mac tools vendors has, in a matter of months, made the Mac a — perhaps "the" — premier Java platform. Apple, moreover, now seems to grok the platform-neutral language's potential to level the playing field — not just for whizzy Web adornments but also for corporate client-server development.

▸ **OpenDoc.** This WWDC will likely go down as a turning point on OpenDoc's rocky road. Impressive parts from Digital Harbor Inc. and Adrénaline Software Inc., among others, provided concrete illustrations of the benefits of the technology, both for users and developers. And demonstrations of parts playing Java applets and Netscape Navigator plug-ins, capped by Netscape Communications Corp.'s surprise commitment to deliver its browser in OpenDoc format, went a long way toward eliminating the specter of proprietary isolation that once hovered over Cyberdog.

▸ **Cleanup.** I took particular pleasure in hearing Apple promise a full-scale effort to clean up the System folder mess in Mac OS 8. A new Feature Manager, backed by a database that sounds a lot like a system registry, will hide the innards of the system; a new GUI, organized by features rather than by files and folders, will provide a user-friendly vehicle for managing system resources.

All in all, it's an ambitious program, and one has to wonder whether Amelio will be able to instill the discipline and impose the efficiencies it will require. But if he can pull it off, he will earn the $10 million bonus his contract allows — and I, for one, won't begrudge him a penny of it. □

Henry Norr, editor emeritus of MacWEEK, welcomes feedback in the MacWEEK forums on CompuServe or at henry_norr@macweek.com.



LETTERS

Confusing CPU choices

After reading the article about Apple's current and pending systems (05.13.96, Page 1), I think users are going to be very confused. When I buy an Intel Pentium system I know what I am getting. All things equal, the only variable is the clock of the CPU (which is relatively easy to understand). But with Macs we have the PowerPC, although the 604 is more powerful than the 601, which is more powerful than the 603 and so on. The consumer models will be powered by the 603e, while the business systems will be powered by the 604e.

These different systems lead to confusion and apprehension from users and can drive people away from the Macintosh. It's already difficult to make a case for the Mac based on the software availability. Don't make it any more difficult by confusing the hardware issues.

John Wong
PC specialist
New York City Board of Education
Brooklyn, N.Y.

Inactive Mac support

Microsoft's ActiveX (05.13.96, Page 20) seems like such a waste for the market as a whole, and for Mac users especially. I realize that it has significant implications because it has its hooks in OLE, but how can I get excited about a project that states up front that the Mac will be treated like a second-class citizen? I think I'll put my support with an open standard that wants to support my platform and has demonstrated it since its beginnings. OpenDoc or Java (or some combination) looks like the real winner in this battle.

Mike Cox, technician
WebCreations
Denton, Md.

Developers debate

Clifford Colby's "Platform struggles test hearts, minds" article (05.13.96, Page 1) is filled with gloomy grumblers. Companies like Casady & Greene Inc. and Berkeley Systems Inc. are part of the problem.

Colby notes the fight for shelf space. When companies such as Berkeley Systems produce separate Mac and Windows versions of their software, they contribute to the problem. Buyers do not have infinite budgets and retailers don't have infinite shelf space for the ever-increasing varieties of software.

Hybrid Windows/Mac boxes save everyone money and time. Extra floppy disks are nothing compared to the difficulty of moving boxes into stores with little or no room. They even give people an opportunity in a PowerPC Platform environment to switch platforms without losing precious dollars on applications.

Of course, Microsoft gives developers everything under the sun. It needs to. Windows is an operating-system framework full of big holes. Many older Mac developers, who used to build applications to fill the holes in the older versions of Mac OS, need a platform like Windows.

The real story is the "smaller companies busting their butts." They represent a new age in product development for the Macintosh. Solutions providers and developers of technologies that integrate products such as OpenDoc, AppleScript and Cyberdog will create a whole new generation of software that will make Microsoft Office about as current as SamnaWord 7.

Brian Michael Ross, CEO
Saracen Communications Inc.
Ventura, Calif.

Last Word on upgrades

We enjoyed Gene Koprowski's article on competitive upgrades (05.06.96, Page 43). This is a complicated topic, and we noticed a few errors you may want to clarify for your readers.

Microsoft does not offer competitive upgrades to Word or Excel for the Macintosh. We do offer ClarisWorks users a competitive upgrade to Office, as a more affordable trade-up option to a full-featured suite. The Office upgrade sells for about the same as a single-user copy of Word or Excel, however, so buying Office to get Word saves only about $10, not $200.

You also mention there are "no boundaries" to acquiring the upgrade version. This is only partly true. In the past, we required customers to supply a program disk or original title page at the time of purchase to qualify for upgrade pricing. Customers and resellers found this burdensome. Now the software itself checks for upgrade eligibility and, in the case of Office, will not install unless it detects a qualifying prior version.

Dave Meltzer, group product manager
for Mac applications
Microsoft Corp.
Redmond, Wash.

How to contact MacWEEK

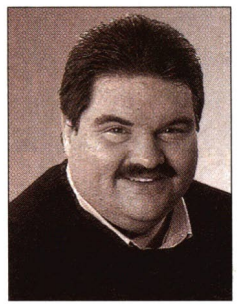
Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3651. We can be contacted online: CompuServe, 76077,1351; Internet, letters@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

THE MAC MANAGER DON CRABB

Mac managers could use a support group, too

One thing struck me as the Apple Worldwide Developers Conference came to a close: Nobody thanked us, the faithful Mac managers. The truth is, without Mac managers working in small, medium and large organizations, without Mac managers in K-12 schools and colleges and universities, Apple would have been dead long ago. El croako. Morte. Eighty-eight and out the gate.

Don't get me wrong; it's good — it's fantastic — that Apple has finally figured out that it must bring developers into the company, as if they were dotted-line employees, to help develop and market products as extensions of the Mac, rather than viewing them as a profit center or as competition.



But what about Macintosh managers? To put it bluntly: Where's ours?

A new MacIS

With the demise of MacIS (a demise that was the direct result of the Mac's alleged nonexistence in medium to large companies), Mac managers have no organization that can act as their advocate to Apple. And even MacIS wasn't all that useful, since it ignored the needs of small-shop managers.

It's time for Apple to create its own Mac manager support organization — one that's not an outgrowth of developers relations, since Mac managers oversee more than in-house development, and also one that's not an outgrowth of product evangelism, since Mac managers manage more than the acquisition of Mac products.

Apple's Mac manager organization needs to get support from across all of Apple. It needs to function in technical, marketing and customer service ways to assist the front-line Mac folk who find it increasingly difficult to keep (let alone expand) Macs in their institutions. Let's call this organization the Apple Worldwide Mac Managers Association. (AWWMMA? OK, maybe we should work on that name.)

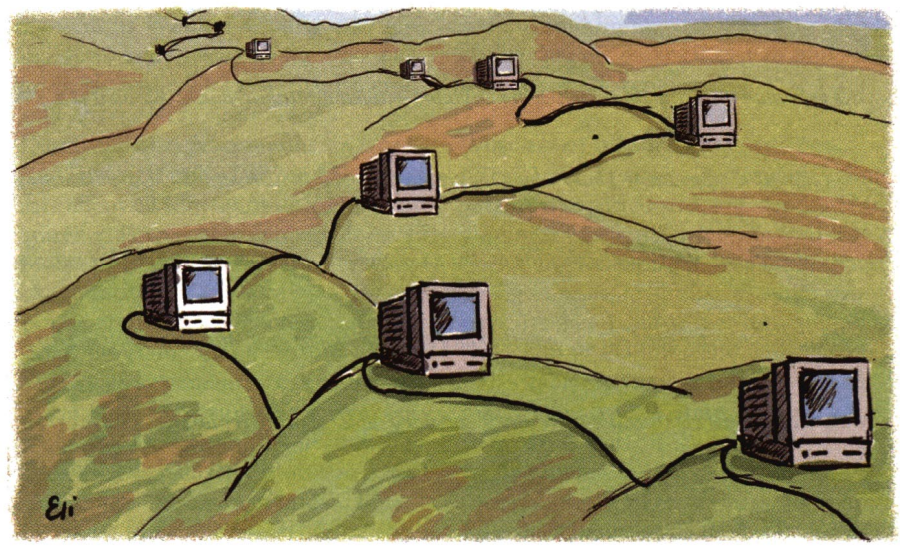
Apple's first priority for this association would be to poll Mac managers to discover their day-to-day and long-term support requirements. Does Apple know that our needs are different from end-user customers, different from in-house and commercial developers, different from all the targeted Mac markets? Does it know that these needs constantly change? I wonder.

AWWMMA 97

How would AWWMMA work? In much the same way as Apple Vice President Heidi Roizen's newly revamped Developer Relations group will work: by defining the constituency (those who manage Mac shops in all environments), identifying their needs and then implementing a realistic support plan for the group. It ain't rocket science, as they say. By this time in 1997 we should all be getting ready to attend AWWMMA 97.

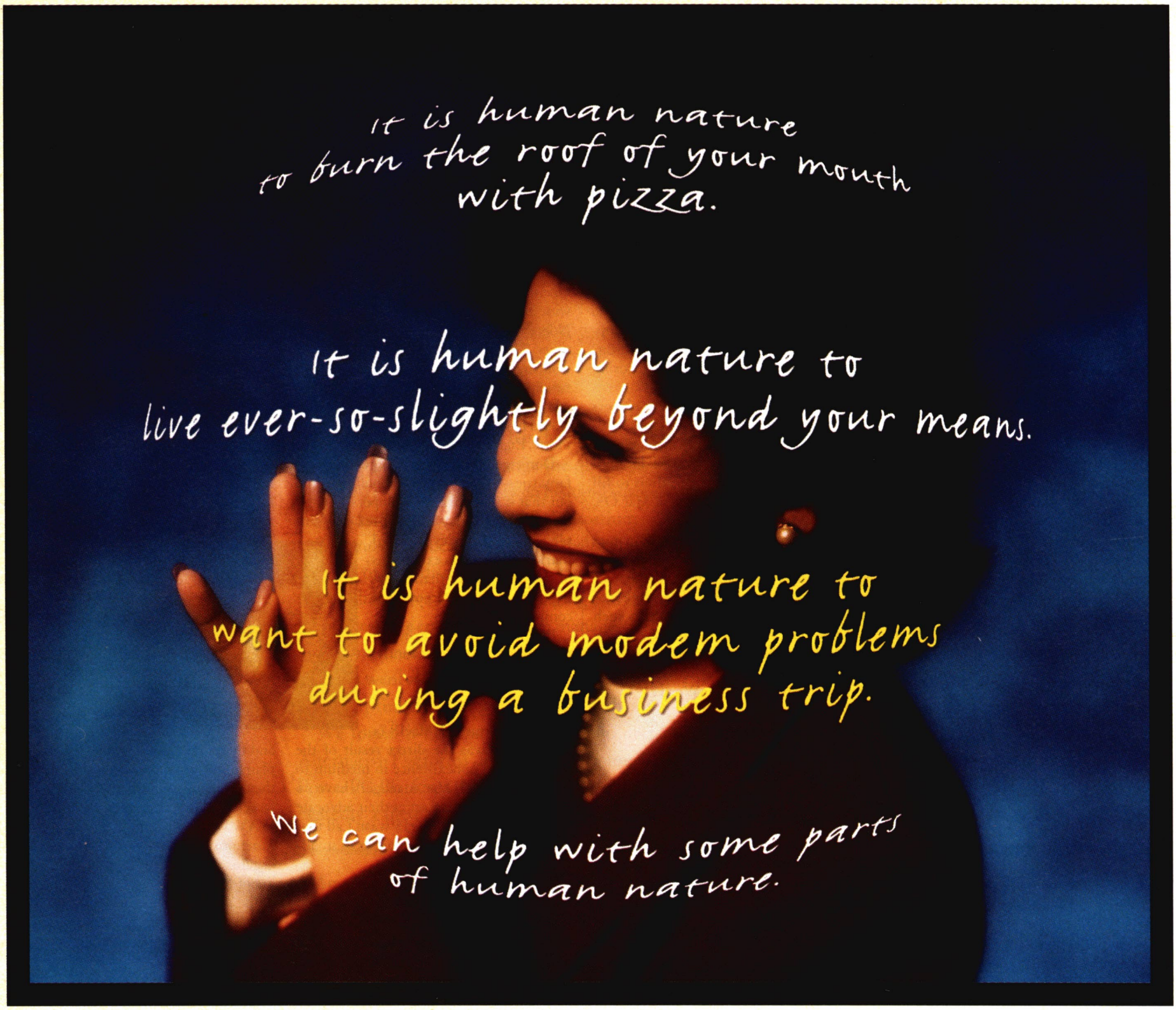
AWWMMA would fulfill three vital functions: First, it would give Apple the organization to help stop the hemorrhaging of Macs out of big and small organizations alike. Second, it would give Mac managers the information to make convincing strategic decisions that involve Macs. And third, it would give Apple a targeted organization that goes right to the heart of corporate computing — something it has sorely lacked since forever. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.



The Great Network of China

Comments? Ideas? Contact Eli at elitoons@aol.com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Mac clients, take note: Lotus Notes 4.1 finally arrives

By Jonathan A. Oski

Mammoth app now boasts enhanced e-mail and new Web access features.

Playing second fiddle once again, Release 4.1 of the Macintosh client for Lotus Notes was recently issued — more than four months after Version 4.0 for Intel-standard PCs. However, Mac users will find the new Notes 4.1 worth the wait: Lotus Development Corp. has improved its e-mail functions, streamlined the interface and added new integration with the Web.

The rest of Notes 4.1, which costs $275 per client, is also significant for cross-platform users. Additions include a Microsoft Windows NT Workstation client and new server software for Novell NetWare, OS/2 Warp and Windows 95.

Notes virtually defined the groupware market several years ago, but while it remains unparalleled in the features it can provide an organization, its market share is well short of ubiquity and its future is cloudy. Its most formidable challenger could emerge from Netscape Communications Corp., which acquired Collabra Software Inc. and its collaboration server product, Share. Lotus, however, played a wild card by incorporating the InterNotes Web Navigator into Notes 4.1. This new feature makes the Web an extension of your Notes environment and can also extend your Notes information to the Web.

What's notable in Notes

As we outlined in our beta test of the Notes client for the Mac (see 12.11.95, Page 37), Notes 4.1 contains a significant number of enhancements over Release 3. For users, the most notable is the new interface that lets you simultaneously see views and documents in a single window with resizable panes. In earlier releases you had to open a separate window to see a document listed in a database view. This new feature makes navigating a Notes database much easier.

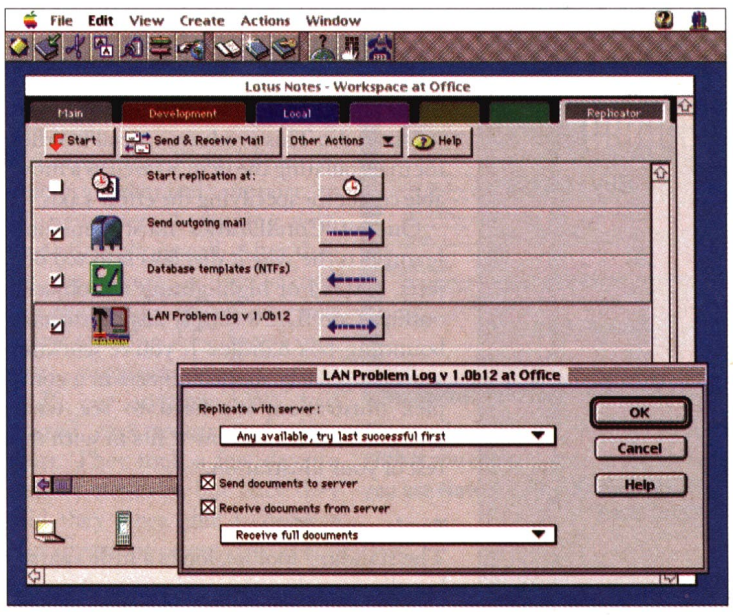
Notes Mail has been greatly enhanced and is completely integrated with its collaboration components. Previously, the e-mail interface was clunky and difficult to use compared with other leading e-mail products such as Lotus' cc:Mail and CE Software Inc.'s QuickMail. The improved interface that Lotus has drawn from cc:Mail makes Notes Mail infinitely more usable. In addition, the capability to manage your mail using agents and views gives you greater control over electronic messages.

These features, coupled with Notes' inherent replication features, make it simple to read and create messages when you are disconnected from your network and have the changes propagated to the network via a subsequent LAN or dial-up session.

But the real jewel in the Notes 4.1 crown is the InterNotes Web Navigator. A combination of client and server products, Web Navigator lets a group access the Web without installing a browser on everyone's desk, teaching them how to search the Internet and worrying about the sites they may be browsing.

All of this is configurable, but in general you use this feature as you would any other

See Notes, Page 25



The new Replicator tab in Lotus Notes 4.1 makes the process of managing database replication easier than ever before. Replication can take place on an automatic, scheduled basis for some of your data and on demand for other Notes databases.

score card

Notes Release 4.1

Lotus Development Corp.
Overall value ♦♦♦ **List price: $275***

The wait is over for Mac users anxious to upgrade to the latest release of Notes. The updated client is now PowerPC-native and noticeably faster on high-end Power Macs. Although Lotus appears to be struggling to find an identity for Notes in the wake of the phenomenal growth of Internet and intranet products, Notes remains the leader in the groupware and collaboration market. Most notable of Version 4.1's improvements is the paned interface, the newly solid e-mail, easily created agents and the InterNotes Web Navigator. Missing is support for OLE or OpenDoc, which makes it difficult to deploy Notes as a container application to hold embedded pieces of other documents. While current users should upgrade as soon as possible, those still testing the groupware waters should consider less-expensive, Internet-based solutions before committing to Notes.

Performance ♦♦♦ **Ease of use** ♦♦♦
Features ♦♦♦♦ **Documentation/support** ♦♦♦

**For full Notes client; desktop version, $69.*

Key ♦♦♦♦♦ *Excellent* ♦♦♦♦ *Very good* ♦♦♦ *Good* ♦♦ *Fair* ♦ *Unsatisfactory*

CorelDraw 6 for the Mac makes cross-platform jump

From Page 1

than the competition's. Excellent compatibility with its Windows sibling does give CorelDraw some strengths for cross-platform work, while the company's generous bundle offers a lot for the money.

Composed of eight components, CorelDraw 6, which will ship for $595, consumes about 60 Mbytes of disk space and requires a Power Mac with at least 16 Mbytes of RAM. The complete Corel package includes CorelDraw; Artisan, a painting program; CorelTrace, an autotracing program; CorelTexture, a bitmapped texture generator; CorelDream, a 3-D program; a charting utility; a font organizer; and a cataloging application. The company also plans to throw in Corel WordPerfect 3.51 for an unlimited time.

Corel has done a good job of grafting a Mac interface onto a long-standing Windows application, but as you'd expect, there are still many little Mac-isms missing, such as Option-dragging to copy an object. The interface could benefit from some streamlining, but extensive Apple Guide support makes it easy to find solutions to specific problems.

Window of opportunity

CorelDraw displays documents, along with a large pasteboard, in a standard Mac window. Open the program and you'll find a single floating palette with a smattering of tools, including graphics primitives; freehand and Bezier drawing tools; and coloring, zooming and selecting tools. Other tools are scattered among dozens of menu items and floating palettes, which will make life difficult for those with smaller monitors.

Some of CorelDraw's basic tools are a little underpowered. The Bezier tool isn't as fluid and simple to use as Illustrator's,

See CorelDraw, next page

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CorelDraw

From previous page

while operations such as converting curves to corners are not as easy to figure out as in FreeHand. And although the program's text facilities include advanced features, such as text on a path, typeface selection and styles are buried in dialog boxes.

There are some nice shortcuts among the mess of palettes and menus. For example, rather than use separate Scale, Rotate and Shear tools, just double-click the shape you want to edit: This produces special handles for manipulating the item, as well as a movable center for specifying the effect's axis.

One of CorelDraw's most annoying features is the way it displays selected objects. Instead of highlighting the object's outline, CorelDraw simply displays square bounding-box handles. If you're working with irregularly shaped objects in a complex illustration, it's hard to see what you've selected and how it fits in with the rest of your illustration.

Tools and effects

The standard toolbox looks a little sparse, but dig into the other palettes and menu items and you'll find many interesting tools and effects. The PowerLine palette, for example, lets you define complicated strokes of varying widths that are automatically applied to any line or shape you draw. You can change a PowerLine's shape at any time.

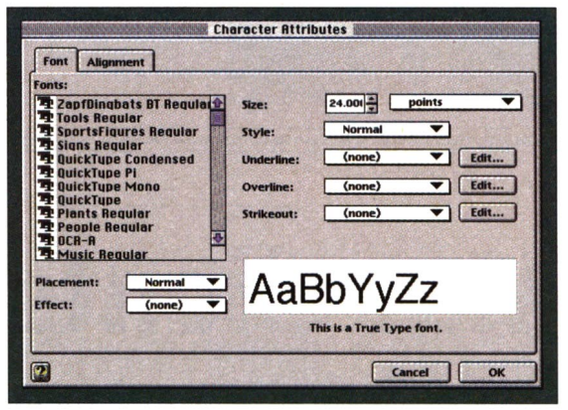
Corel supports neither Adobe Systems Inc.'s nor Macromedia Inc.'s plug-in APIs, but CorelDraw offers several built-in tools that appear as plug-ins in Illustrator and FreeHand.

Among these are an Extrude palette, which features full 3-D extrusion controls, including lighting and coloring; it is ideal for quick 3-D logos or simple shapes. Envelope distortions, lens distortions and 2-D Boolean operations are also supplied.

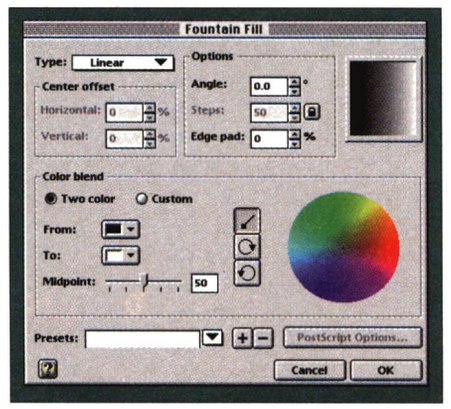
In a feature unique to CorelDraw, you can easily copy all of an object's effects and properties to another object with a single menu command. Once you've extruded a shape, for example, you can copy its parameters to any other shape.

Likewise, you can clone any CorelDraw object with the Clone command, which is more powerful than a simple Duplicate command. When you change the original, the program automatically applies your revisions to all clones. The combination of these two features makes it easy to create complicated repeating textures or patterns that can be changed at any time.

A powerful complement of gradient tools lets you create fountain, pattern and PostScript fills. The Fountain Fill tool's single dialog box provides four types of fills with controls over start and end colors, midpoint, and presets. Unfortunately, the gradient controls are modal rather than floating palettes, requiring you to invoke the gradient dialog box for each shape you want to fill.



Lacking font, size and style menus, CorelDraw 6 forces you to define text attributes through this single dialog box. It's comprehensive, but hardly convenient.



Gradient tools offer several kinds of fills as well as color selections and orientation controls.

Performance

For a first release, CorelDraw 6 is surprisingly robust — no doubt because it has inherited much from its mature Windows sibling.

Advanced features, such as color gamut warnings and previews, sit alongside multipage documents, style sheets, multiple layers and features imported from the CAD world, such as automatic dimension tools. Support for AppleScript, ColorSync 2.0 and Kodak Precision Color was not included in our beta, but Corel said these features will be in the final version. QuickDraw GX, which was initially planned for CorelDraw 6, will not be added.

Although our beta copy included speed-inhibiting debugging code, we still found CorelDraw's performance to be snappy and responsive. Screen redraw, scrolling, gradients and other effects operated at acceptable speeds and were comparable to Corel's competition.

Our beta was unable to save in Illustrator or FreeHand format, but it could export an EPS or PICT image. For placing bitmapped work in your illustrations, however, CorelDraw supports just about every format imaginable on both Mac and Windows platforms. And unlike Illustrator, which bogs down when placing non-EPS images, CorelDraw's performance is not affected by a placed image's file format. Further, the program will offer full binary file compatibility with its Windows counterpart.

Conclusions

CorelDraw 6 has a lot to offer both business and graphics illustrators: good drawing tools and effects, multiple pages, powerful text controls, and style sheets for text and graphics. But it offers little over existing Mac programs. While we were impressed with some of the tools, CorelDraw mostly presents variations on Illustrator's and FreeHand's features set — without the interface advantages. Corel won't win many Illustrator and FreeHand users, but it may pick up some new users, especially those in cross-platform environments.

Corel Corp. of Ottawa can be reached at (613) 728-8200 or (800) 772-6735; fax (613) 761-9176; http://www.corel.com. □

CorelDraw bundle a mixed bag

Like Adobe Illustrator and Macromedia FreeHand, purchasing CorelDraw gets you a bundle of other applications. The selection adds up to a good value, but none of the products will replace the tools you may already have.

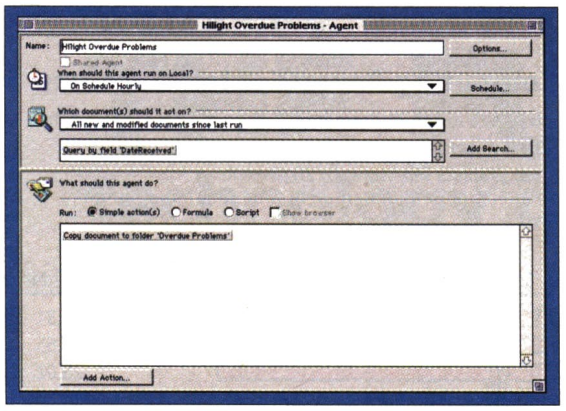
Artisan, Corel Corp.'s painting program, is no threat to any existing Mac product. With a standard toolbox of paint brushes, airbrushes, simple shapes and distortion tools, Artisan wins no points for innovation, and the tools themselves are underpowered. Brushes are not anti-aliased, and the airbrush had trouble laying down solid lines. These problems, combined with the lack of a Clone tool, make the program unsuitable for image editing, while the lack of more advanced masking and painting tools make it a weak painting program. A small plus: Artisan accepts plug-ins compatible with Adobe Photoshop.

CorelTexture, on the other hand, is an extremely capable procedural texture generator that lets you create bitmapped, photo-realistic textures — such as 3-D granite, marble, wood, custom textures and logos — with multiple light sources and bevels.

CorelTrace traces bit maps into line art à la Adobe Streamline or ScanVec Inc.'s Tracer. Although it lacks Tracer's extraordinary tools, it does an adequate job of tracing simple artwork, and it offers some unique tracing modes, such as Mosaic and 3D Mosaic, which render an illustration as colored squares or 3-D wedges, respectively.

CorelDream 4 is simply Fractal Design Corp.'s Ray Dream Designer 4, a competent 3-D modeler, renderer and animator. While it's not our first choice for a 3-D modeler, it's fine for quickly rendering 3-D images to include in CorelDraw illustrations — and you can't beat the price.

Corel's multimedia cataloger, font organizer, charting utility and WordPerfect 3.51 were not included in our beta. — By Ben Long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Options...
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On Schedule Hourly
Schedule...
Which document(s) should it act on?
All new and modified documents since last run
Query by field 'DateReceived'
Add Search...
What should this agent do?
Run: Simple action(s) Formula Script Show browser
Copy document to folder 'Overdue Problems'
Add Action...

Agents can be simple or complex scripts that process documents either at your workstation or directly on the Notes server. With Agents you can have messages or Notes documents automatically preprocessed for you, and Agents can easily let you create automated work-flow applications.

Notes

From Page 23

Notes database. Each time a user requests a Web page, Web Navigator retrieves it and stores it in a Notes database. This makes it available to anyone with access to the Notes server — even those without direct Internet access. You can also embed URLs (uniform resource locators) into a Notes document and easily link relevant information to a Notes document. This lets you create virtually seamless integration between the Web and your Notes databases.

Agents, which replaced macros, are another significant user-oriented feature in Release 4.1. Agents can execute locally or on a server and can be used as the basis for a number of applications, such as automated work flow, mail routing or help-desk problem delegation. Their point-and-click approach makes them much easier to create.

LotusScript, the VisualBasic-compatible environment for creating Notes applications, is now available on the Mac, paving the way for Macs to participate more fully in a cross-platform environment.

Living with weaknesses

Despite improvements, the Mac still languishes behind its Intel-based counterparts when it comes to complete Notes functionality. In the PC environment, Notes can serve as a decent container application that you can use to warehouse related bits of information. You can, for example, have a Notes document that has index information for a topic and embedded spreadsheets, images, sounds and word processing documents attached. Lack of OLE support for the Mac, which smooths interaction with other desktop applications and data, makes this difficult. Although Lotus said OLE will be added in a future release, the company was unable to tell us when to expect it. Lotus is also noncommittal with respect to OpenDoc support.

In addition, Notes continues to be one of the most resource-intensive applications on the market. The Mac client is now available in both PowerPC-native and 680x0 versions. System 7.1 or later is required for the 680x0 version; System 7.5 or later for Power Macs. In either case, Lotus recommends at least 20 Mbytes of total RAM and 40 Mbytes of available local disk space.

The Notes client can communicate with a server using AppleTalk, TCP/IP or X.PC. We found TCP/IP to be a faster way to communicate with the server than AppleTalk on all the Macs we tested.

As there is no Mac-based Notes server, organizations that choose to deploy Notes on their network will need to select one of the supported server platforms. But one of the nice things about the Notes server is that it will run on just about anything — except a Mac — and some of the platforms, such as Unix, are very scalable.

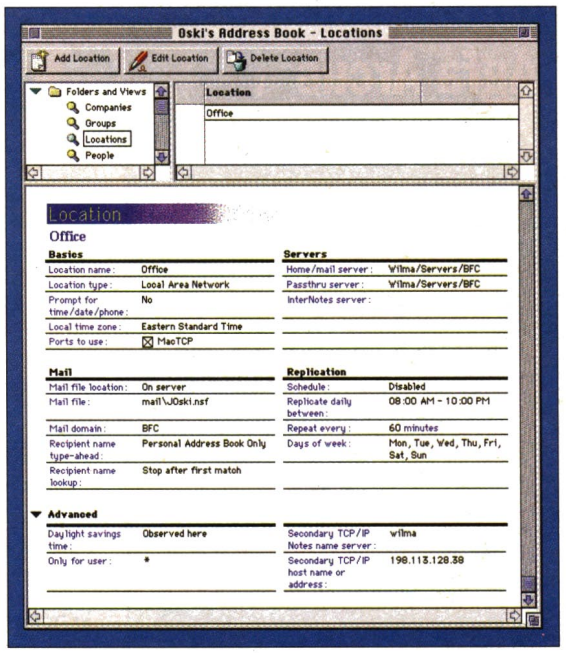
We used a Windows NT Notes server and found it relatively easy to configure and manage. We installed the Notes client on a variety of Macs, including a Power Computing Corp. PowerWave 604/150, a Power Mac 6100/66, a Macintosh Quadra 800 and a PowerBook Duo 230. Notes performed so disappointingly on the Duo that it was virtually unusable. However, using Notes was tolerable on the midlevel clients, and performance was quite pleasing on the PowerWave. Notes craves RAM, so we allocated as much as we could spare, but since we were using a Mac with 48 Mbytes of RAM, it was bothersome to be limited to running just a few concurrent applications.

Documentation and support

Notes ships with a few pounds of documentation that is certain to annoy when you try to find a simple answer to a question. We recommend using the online documentation, a Notes database that is typically installed on your Notes server. With this, you can hunt for topics using Notes' full-text search capabilities.

Our biggest gripe about both forms of documentation is their reference-like feel. Instructional sections are scarce, making it difficult to learn the product by using the documentation. Examples and step-by-step instructions would have been a big asset.

Lotus offers 30 days of introductory technical support to all new users, beginning with their first phone call. After this, or for server or application development questions, you must enroll in a fee-based support program beginning at $175 per instance. We had mixed experiences with support: They took a few days to return our calls, but once they did they were able to answer our questions promptly and accurately.



The new Location Document is a boon for mobile users. With it you can store preferences for the various places you use Notes, such as your office, home or on the road.

Conclusions

Without question, current Notes users will want to upgrade to Release 4.1 as quickly as they can. Not only does it provide more features and better cross-platform functionality to Mac clients, but the enhanced e-mail client is compelling in its own right.

This said, the Mac user must still face a number of issues: Notes demands a hefty client; OLE is nowhere in sight for Mac users; and Lotus has failed to commit to OpenDoc, which is perplexing given IBM Corp.'s voiced support in this area.

If you're not a current Notes user, proceed cautiously. Notes has much to offer as a collaboration platform that can be easily integrated into your Internet and intranet strategy. It is certainly the most mature of the alternatives — including specific messaging products such as SoftArc Inc.'s FirstClass and intranet products such as Web, news and mail servers — and it offers a widely tested platform for creating and deploying customized applications. But before you decide to buy, be sure you need the breadth and depth of functions embodied in Notes; from a management perspective, a less expensive Internet server may meet your needs and be less burdensome.

Lotus Development Corp. of Cambridge, Mass., can be reached at (617) 577-8500 or (800) 346-1305; fax (617) 693-3899; http://www.lotus.com. □

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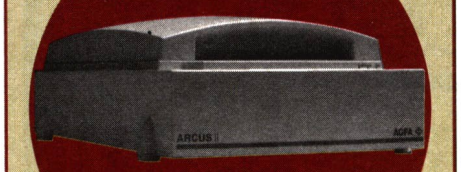

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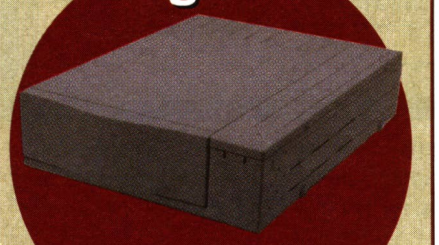

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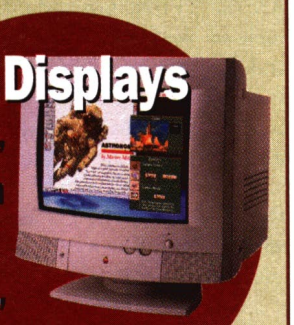

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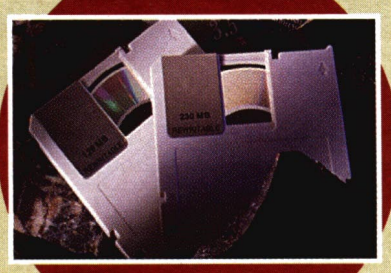

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reviews FORUM

Power boosts cache size

Overall value:
PowerCenter 150 ◆◆◆◆
PowerCenter 132 ◆◆◆
PowerCenter 120 ◆◆◆◆

When we initially tested Power Computing Corp.'s new PowerCenter models, we were impressed with their price/performance but noted that, megahertz for megahertz, they fell a step behind Apple's latest systems, both in MacBench 3.0 scores and in real-life tests with Adobe Photoshop 3.0.5 (04.29.96, Page 1).

However, even with lower prices, lagging behind Apple apparently wasn't part of Power Computing's marketing plan, so the clone maker decided to upgrade even before it had begun shipping. Instead of the 256-Kbyte Level 2 cache originally planned for the midrange PowerCenter series, the company is now equipping those models with a 512-Kbyte L2 cache (just like their high-end siblings, the PowerTowers) at no increase from previously announced prices.

MacBench, developed by Ziff-Davis Benchmark Operations, found that the extra cache makes a substantial difference: The systems' scores on MacBench's CPU performance test increased nearly 15 percent.

Doubling cache size won't necessarily boost performance as much in other systems. A bigger cache means the CPU can find data it needs more often without going to the main memory, but the time saved depends on how long it would have taken to obtain that data from main memory. In the PowerCenter and PowerTower models, like the Power Mac 7200, memory access is slower and the benefits of caching are correspondingly larger than in higher-end Apple models with interleaved memory.

With this speed boost, the PowerCenters stand up better against their Apple competitors. Instead of lagging behind the Power Mac 7600, the PowerCenter 120 with enlarged cache slightly outscores it on MacBench's CPU test. Likewise, the PowerCenter 150 tops the Power Mac 8500/150, which comes with a 256-Kbyte L2 cache, and it nearly matches the 9500/150, which has a 512-Kbyte L2 cache on its logic board.

The benefits of a larger cache were also noticeable in our Photoshop tests. A PowerCenter 120 with a 512-Kbyte cache, for example, needed only two minutes and 17 seconds to convert our test image from RGB to CMYK color, 36 seconds less than the same system with the smaller cache. It's still not quite as fast as the 7600, which did the job in 1:58. The difference, though, is much smaller now — especially when you consider that the PowerCenter 120 costs about $1,000 less than a comparably configured 7600.

The larger cache also improves the PowerCenters' disk and graphics performance. In addition, Power Computing pointed out that an Apple extension called 7200 Graphics Accelerator should be enabled in its PowerCenter and PowerTower models, all of which are based on Apple's 7200 logic board. This extension was not loaded in our previous MacBench tests.

The combined effect of the extension and the larger cache boosts the PowerCenter systems' scores in MacBench's Graphics Mix test, for example, by about 20 percent. In our Publishing Graphics Mix test, which measures tasks in applications such as Photoshop and QuarkXPress, the Power Computing machines handily beat the Apple alternatives.

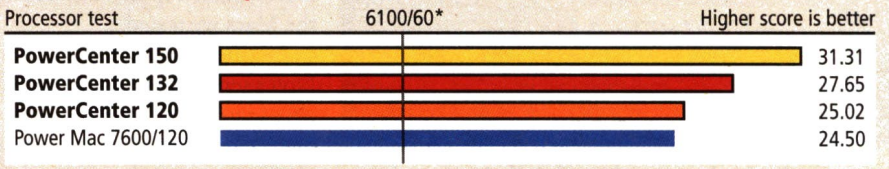
The new Power Computing models, with their lower prices and bundled keyboards and software, were already better values than Apple's new Power Macs. With 512-Kbyte caches in the PowerCenter models, they look better still: You no longer have to worry much about trading off performance to save money. In some operations, Apple systems still outperform the PowerCenter systems, and they also offer several features the clones still lack, such as dual SCSI and digital video support. For most users, however, the PowerCenters and the PowerTowers now represent a no-compromise alternative to Apple's considerably more expensive systems. — *By Henry Norr*

MACWEEK MACBENCH 3.0 LABS

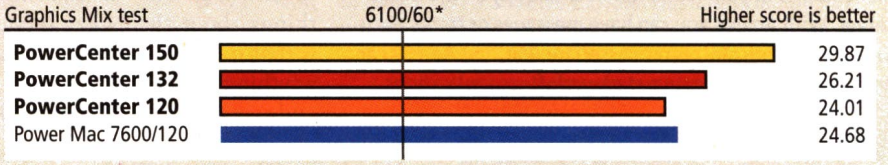
Power Computing PowerCenter machines

Doubling the cache size to 512 Kbytes added 15 percent to the PowerCenter machines' CPU test vs. previous tests. The larger cache plus a graphics extension boosted Graphics Mix scores by 20 percent.

PowerPC-native CPU speed



Graphics speed typical of general-purpose software



Test configuration: PowerCenter machines had 16 Mbytes RAM, 512-Kbyte Level 2 cache, 1 Mbyte VRAM. Power Mac 7600/120 had 16 Mbytes RAM, 256-Kbyte Level 2 cache, 2 Mbytes VRAM.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

For the record

The DeltaGraph 4.0 review (05.13.96, Page 29) said DeltaGraph and Microsoft Excel 5.0 don't allow split windows to view data pages and chart pages simultaneously. Both support this feature.

The Live Picture 2.5 review (04.15.96, Page 35) said that the FastEdit IVUE utility is free upon registration of Version 2.5. It is $50.

PB upgrade snubs Copland

Your review of the NUpowr 603e upgrade from Newer Technology Inc. (05.06.96, Page 37) left out a drawback: Apple states that Copland will not work in upgraded 500-series PowerBooks. Only upgraded Duos and 5300s will be able to run the future operating system.

Jim Golden
Huntington Beach, Calif.

It's brighter with GX

I'm stunned. Two positive reviews of QuickDraw GX-based applications in one issue (05.06.96, Page 37 and 39)! Thank you for seeing the light. Americans don't understand how poor a solution PostScript has been for Asian publishing. GX is the first truly robust proposition for solving the problems of digital typography in Japan, and it needs all the positive spin it can get.

Giddy with relief,
Joel Ingulsrud, president
Third Culture Enterprises
Palo Alto, Calif.

Blind us with science

You conduct tests aimed mainly toward graphics applications. It is difficult these days to find a review that discusses performance in a typical scientific application environment. In my work environment, few or none of us have installed PageMaker, Photoshop or other graphics applications. We use Matlab, Maple, Mathematica, SPSS, JMP, LaTeX, ANSI C/C++ and so on. And I do believe we are not a small minority — Apple has a long-standing tradition in science.

Jørgen Haug
Bergen, Norway

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3602; reviews@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

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Technical

T1. 1.0 Libraries Technical Overview
Design, functionality, and extensibility in the 1.0 Java API.
JONNI KANERVA, JavaSoft • FRANK YELLIN, JavaSoft

T2. Platform Independence & Reusability
How the Java architecture makes platform independence possible.
JAMES GOSLING, JavaSoft

T3. Java Runtime Internals
Internals of the virtual machine, garbage collection, etc.
FRANK YELLIN, JavaSoft • TIM LINDHOLM, JavaSoft

T4. Future JavaSoft Technology
A preview of upcoming JavaSoft technologies on the horizon and beyond.
JAMES GOSLING, JavaSoft

T5. Servers & Server Extensions
Introducing the Java Server Framework and Servlet API, the Java HTTP Server, and how to extend server with servlets.
PAVANI DIWANJI, JavaSoft • and other team members TBA

T6. Database Access
JavaSoft's technology for intranet and internet database applications.
RICK CATTELL, JavaSoft • INDUSTRY PANEL TBA

T7. Cryptography & Security
JavaSoft's security strategy: signed applets, untrusted applets, mobile applications, and beyond.
BENJAMIN RENAUD, JavaSoft • MARIANNE MUELLER, JavaSoft

T8. JDBC: Java Database Connection
How to use the JDBC API to connect to relational databases.
GRAHAM HAMILTON, JavaSoft

T9. Media Class Libraries
The classes being defined by Sun and other partners for richer 2D and 3D graphics, imaging, audio & video.
SPEAKER TBA

T10. Remote Objects
Introducing JavaSoft's remote method invocation and distributed object technologies.
PETER KESSLER, JavaSoft • JIM WALDO, JavaSoft

T11. Electronic Commerce
Introducing Sun's framework for Java-based electronic commerce.
TED GOLDSTEIN, SunLabs

T12. Embedded and Small Systems
Java implementations for systems with limited hardware resources and software support.
PETER MADANY, JavaSoft

Design

D1. Advanced Tutorial: Real-World Applets
Tips and tricks for developing small, fast commercial-quality applets.
PATRICK CHAN

D2. Advanced Tutorial: Network-Based Applications
How to use the Java Networking Classes, including TCP sockets, datagrams, multicast etc.
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D3. Human Interface Design
Designing human interfaces that make use of applets on web pages.
ANNETTE WAGNER, JavaSoft

D4. Authoring & Scripting
A panel discussion on scripting language technologies such as JavaScript™, and tools for authoring Java-powered apps.
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D5. Advanced Tutorial: Abstract Window Toolkit
How to take full advantage of the Abstract Window Toolkit (AWT) to develop robust Java-based GUIs.
AMY FOWLER, JavaSoft • JIM GRAHAM, JavaSoft

D6. Designing with Realtime Data
Concepts and complexities of designing Java-powered applications which manage realtime data.
SPEAKERS TBA

D7. Private Label Browsers
How to turn the HotJava™ browser into your own custom Web browser.
HERB JELLINEK, JavaSoft • STEVE BYRNE, JavaSoft

D8. Designing Your Own Class Libraries
How to build your own class libraries for the Java Language.
SPEAKER TBA

D9. Advanced Tutorial: Multithreaded Applications
How to use the power of multi-threading in your Java-powered applications.
TOM BALL, JavaSoft

D10 Designing with 3D
A panel discussion on using 3D libraries for the Java Language.
INDUSTRY PANEL TBA

D11. Distributed Computation & Persistence
Introducing JavaSoft's technology for persistent objects and distributed computation.
JIM WALDO, JavaSoft

D12. Multiuser Environments
Social-oriented online systems: requirements, examples, futures.
DOUGLAS CROCKFORD, Electric Communities

Strategy/Business

S1. JavaSoft Business Roadmap
An overview of JavaSoft's business and technical strategies.
JON KANNEGAARD, JavaSoft

S2. Industry Outlook (Markets Intro)
Key market segments and opportunities for Java-powered applications.
LEW TUCKER, JavaSoft

S3. The Internet Server
Market opportunities for Java-powered servers and servlets.
HONG Q. BUI, JavaSoft • CHRIS ZULEEG, JavaSoft

S4. Markets: Intranet/Enterprise
How Java-based technology is changing corporate development for the enterprise.
SPEAKER TBA

S5. The Internet Players
Who's who in the wild and crazy world of the Internet.
RUTH HENNIGAR, JavaSoft

S6. The Internet Desktop
How Java technology and the Internet are redefining the desktop.
AMY PEARL, JavaSoft

S7. Java Compatibility
What it means to be Java Compatible™: conformance tests and other issues.
CARLA SCHROER, JavaSoft

S8. Markets: Finance
Leading Financial Service developers discuss issues related to using Java-based technology in the Finance community.
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S9. Java-Based Appliances
Internet appliances and embedded systems incorporating Java technology.
JIM MITCHELL, JavaSoft

S10. Revolutionizing Software Distribution
Exploring new strategies for distributing software over the Internet.
TIM LINDHOLM, JavaSoft • INDUSTRY PANEL TBA

S11. Markets: Entertainment & Publishing
New media and interactivity possibilities for the entertainment and publishing industries.
SPEAKER TBA

S12. Markets: Internet Commerce
Issues of international trade over the Internet, such as taxation, digital cash, encryption and security.
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Industry

I1. Adobe Systems Inc.
Adobe and the Internet. How Adobe technologies complement the Java programming environment
BILL MCCOY, Engineering Director

I2. Borland
Rapid Application Development. Learn how Borland eases your development from prototype to production.
WILLIAM DUNLAP, Product Manager for Internet Tools

I3. Justsystem
Component Software Architecture.
DR. HIDETO TOMABECHI, VP, Advanced Research

I4. IBM, Center for Java Technology Development at Hursley
Platform Independent Programming on the Intranet. How enterprise-wide solutions protect your investment and allow for platform freedom.
SIMON PHIPPS, Market Evangelist

I5. Metrowerks
Source-Level Debugging with CodeWarrior. Overview of CodeWarrior's Java Language support, and in-depth tutorial on source level debugging.
GREG GALANOS, President and CEO • GREG DOW, Senior Product Architect

I6. Mitsubishi
Java-Based Devices from Mitsubishi. This talk will include a discussion about the microprocessor M32R/D and other Java-based devices from Mitsubishi.
SPEAKER TO BE ANNOUNCED

I7. Netscape
Introduction to the JavaScript Language. How the JavaScript Language can help you to create exciting applications and pump life into your web site.
LEONARD FELDMAN, SR. Product Manager, Development Tools

I8. Novell
Beyond Browsers: NetWare servers, services & installed base. How Netware servers, services, and installed base provide opportunities for Java-powered applications.
Drew Major, Chief Scientist, VP Advanced Development Network Products Group

I9. Silicon Graphics Inc.
Building Hypermedia Applications with VRML 2.0. Learn how the Cosmo software environment enables developers to create a new class of 3D and multimedia applications.
SPEAKER TO BE ANNOUNCED

I10. Symantec
Next Generation Development Tools. This session will provide an overview of Symantec's upcoming Java-based development tools for the internet/intranet and database connectivity.
MANSOUR SAFAI, General Manager, Internet Development Tools

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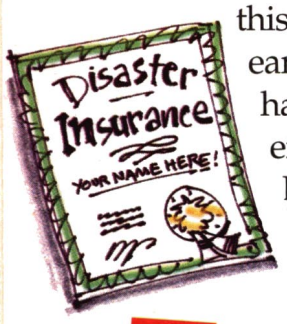

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WORLD WIDE WEB

Hopes for online commerce fuel Web, but content lacking

By Erik Sherman

It's true, you can buy almost anything on the Web — even pizza. Dallas-based Pizza Hut Inc. has had a site for two years. There's just one catch: To receive the delivery, you have to live in Santa Cruz, Calif.

While anyone can access the site, Pizza Hut is simply testing technology. A Pizza Hut in Santa Cruz can receive orders and make deliveries. Those who try to order pizza from outlying neighborhoods — on the East Coast, for example — receive a message that they are outside the delivery area.

The information technology department at Pizza Hut set up the site so it could identify the issues, said Kathy Alexander, director of media services for the chain. "It was designed to be a technical test site and not a site we are prepared to drive consumers to at this time," she said.

"The commerce part of the [Web] equation has still not come together."

— David Langendoen, Scholastic Inc.

Even so, Pizza Hut did learn something useful to marketers: People do not order pizza over the Internet.

Pizza Hut's discovery puts the company in a growing group of businesses and analysts that are re-evaluating Internet frenzy and trying to understand what the Web can do for them.

The common rules of broadcast and print marketing do not apply to the Web. In the case of Pizza Hut, applying traditional logic suggests that the Web site would create demand and offer immediate gratification. "People say, 'The Web is a perfect application for ordering pizza.' It isn't. It's still easier to pick up the phone," Alexander said, noting that Pizza Hut's site is "more of a PR thing than anything else."

Pizza Hut has people working to best understand how to use the Web. "The Internet is a totally new medium, and unlike the current media available, it doesn't fit neatly into a category," she said.

Pizza Hut has had more success with NCAA basketball-related promotions on ESPN's Web site, leading the company to question if it even needs its own site or whether prominent placement on other sites would serve it better.

As expectations have remained unfulfilled, many early entrants have reconsidered their Web activities. According to a December 1995 report by International Data Corp. of Framingham, Mass., the market is expected to experience a hangover through next year. The market research company predicted that because of the slow development of online commerce, 20 percent of the Fortune 500 companies with existing commercial Web sites would either end further Web maintenance and development or close their sites.

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The Mac Broker President Andy Meadows said the Web is best used for brand awareness, while Auto-By-Tel attributes its success to finding the right way to use the Web.

In the eye of the browser

Some companies are successful at making money on the Web, but they are few and far between, according to Stephen Kelly, a Beulah, Mich.-based analyst and publisher of The Internet Profit Report newsletter.

One company that has found success on the Web is Auto-By-Tel Llc. of Corona del Mar, Calif. Its nationwide service, which is also available on Prodigy and CompuServe, brings auto buyers to dealerships offering highly competitive prices. It is partially responsible for between $250 million and $300 million in sales per month, or 12,000 to 14,000 cars sold.

Auto-By-Tel President Pete Ellis attributes the company's success to finding the right way to use the Web. The secret, he says, is twofold.

First, companies must provide not only value but an uncomplicated buying process, including local delivery. To participate, a customer fills out a purchase request and Auto-By-Tel routes it to one local dealer. The dealer then contacts the buyer and takes the transaction from there.

Second, the Web site should support a transactional model that allows measurable results. For example, an effective site keeps track of what happened and who ordered.

Ellis said most companies treat the Internet as if it's another medium, like television, newspapers or magazines. "It's not. It's totally unique. It has its own value system."

Image vs. product

Part of the difficulty for corporations comes from a fundamental dichotomy between image marketing and product marketing. Image marketing stresses company reputations, identity, and the relationships between the company and consumers. In product marketing, a company attempts to promote and sell its products or services.

According to some users, image marketing may be a more effective use of the Web than trying to sell products. Even Auto-By-Tel focuses on its relationship with customers and the need for building trust.

Andy Meadows, president of The Mac

See Solutions, next page

DAVE EMBER

MACINTOUCH

RIC FORD

Taking a stab at sorting out Apple disk formatters

There has long been confusion surrounding Apple's hard disk formatters, and the situation got worse with all the platform changes in the past few years, including adoption of IDE hard drives in certain models. Apple is now distributing two primary formatters, with overlapping capabilities and system requirements, plus a few other special formatters. Identifying the appropriate utility and applying it successfully can be a project. Since formatters install the disk driver responsible for all communications between the drive and Macintosh software, they affect everything you do with a Mac.

As I write this, the current releases of the two primary Apple formatters are Drive Setup 1.0.4 and Apple HD SC Setup 7.3.5. Both are available via custom installation from the System 7.5 Update 2.0 package. An older IDE utility, Internal HD Format, meets some special requirements of the PowerBook 150, which, in a weird twist, loads a disk driver from ROM rather than from disk. Like the other two formatters, this utility is available through Apple's online Software Updates libraries.

Apple also distributes RAID formatters separately as part of some server packages, but these are special-purpose utilities.

See MacInTouch, next page

SOLUTIONS

From previous page

Broker, a Waco, Texas-based consultant for hardware purchases and a Web-service provider, said he thinks the Web is best used for brand awareness. "I don't think the Web was meant so much to be an online commerce forum," he said.

Meadows said the Home Depot and Apple Web sites are good because they provide information and facilities for two-way communications with users.

"For instance, Apple has set up two new sites," Meadows said. "The information is updated daily, in some cases hourly. From their perspective, the site should and has already increased brand awareness and customer service." Home Depot, a home-improvement store chain, includes product information, customer philosophy and store locations.

David Langendoen, director of Scholastic Inc.'s corporate Web site, agreed that brand identity is the most important aspect of Web marketing. "It is the only thing that distinguishes you on the Web," he said. The New York publisher of educational and children's materials tried unsuccessfully to sell products on the Web. "We did have an order site, but it was one of the first things I took down," Langendoen said. He said he plans to redesign the company's site: "It was called the ultimate education store. If that was ultimate, I was kind of worried. The commerce part of the [Web] equation has still not come together."

Information is key

What customers want from a Web site is not the ability to buy products, which is already easy to do with catalogs that offer toll-free service and overnight deliveries. Rather, customers want content and value.

According to Langendoen, people use a Web site because it has valuable information. "What a lot of people do is put up a site because their competitor puts up a site, or they are caught up with all the hype," he said. "The Web is a great medium of distribution, but you have to think about what you are putting up. It's not like a field of dreams here."

Christine Larson works as a producer for Tom Nicholson Associates Inc., a multimedia design company in New York that works with publishing companies. She said generating revenues from sales or advertising online should be a lower priority than brand awareness and customer awareness.

"Generating sales is not a proven revenue source," she said. "Publishing companies are not putting all their eggs in the sales basket and they're not putting their eggs in the advertising basket."

The Mac Broker's Meadows said that Web customers put a premium on information. As a Web user, he said, "I expect it to be the latest information; I expect it to be updated." Without a fresh and updated presence, people do not return to the site.

Maintenance: The hidden task

Beckman Instruments Inc. of Fullerton, Calif., initially underestimated the need for new material. "I think we went on with the expectation that we could go and update monthly," said Stephanie Sorensen, a marketing communications specialist for Beckman's bioresearch group. "We found that the Web is faster paced, with people looking for new content weekly."

The company uses its Web site to distribute product information and applications for its devices. "Today, the thing that often distinguishes one company from another is the customer service you can give," Sorensen said.

Langendoen said maintaining site content is "incredibly expensive. It's like doing a daily newspaper. It's very expensive in terms of capital equipment and resources."

Equally important to providing information, however, is interacting with customers at the Web site. Pizza Hut's Alexander said, "As we found out, you can't just set it up and walk away from it."

Even with the unexpected challenges and general lack of sales, some companies are looking to continue their Web activities, modifying them as necessary.

"I think it's a big part of the marketing mix. I believe it's the future," said Sorensen, who does not rule out future online sales.

Even though sales have not materialized for Pizza Hut, the company is moving ahead to understand how to best use the Web in its marketing activities. "We're still getting our toes wet," Alexander said. "We know it's going to be there eventually." □

Web sites: Ultimately you get what you pay for

Web site development costs typically start at five figures and go up from there. A company must budget for writing, editing, design and programming. Depending on the complexity of the site, this can mean considerable resources. Time-Warner Inc. reputedly has spent millions of dollars to create and maintain its Web site. David Langendoen of New York-based Scholastic Inc. said a staff of eight to 10 for design alone is considered entry-level to start a well-implemented corporate site.

Christine Larson, a producer for Tom Nicholson Associates Inc. of New York, said: "You see all those articles in the paper about how a 13-year-old can put up a Web site? If you spend less than five figures, it will look as if a 13-year-old put it up."

Larson likened the downplaying of the difficulties in site creation to the early days of desktop publishing, when "everyone thought they were designers." A site should be able to convey a corporate identity and even an ambiance, she said, which is difficult for the inexperienced.

Programming for the interactive nature that seems important to many sites can be extensive. "Without investing money in higher-end programming, it's more difficult to do custom database technologies," Larson said. "That's going to get easier as some of the browsers advance and as some of the HTML abilities advance."

While Langendoen wouldn't disclose Scholastic's Web site budget, he said the database software alone could run hundreds of thousands of dollars.

Stephen Kelly, analyst and publisher of The Internet Profit Report in Beulah, Mich., agreed that involved programming can drive up the costs. He disagreed, however, that more money is better, especially when it comes to graphics.

"There's a direct correlation between how much [companies] paid for graphics and how little they make in profit," said Kelly, who has seen profitable sites created for as little as a few hundred dollars. "When people are in a mood to buy, they want to buy quickly and don't want to spend time with graphics."

What is the biggest hidden money sink? According to Larson, it's time. "The amount of time it takes to get your content ready for the Web is as much time as it takes to get content ready to print in a magazine or in a book," she said. — By Erik Sherman

MACINTOUCH

From previous page

Apple RAID 1.1 is a new version supporting only PCI-based Workgroup Servers. Last year's Apple RAID 1.0.2 supports earlier server models.

Formatter features

Apple HD SC Setup 7.3.5, like its predecessors, supports only Apple SCSI drives, checking for special data stored in the disk controller to distinguish Apple disks from third-party products. There have been some hacks in the past to override the check, but this is like playing Russian roulette, given the vast number of variables among drives on the market. Good third-party formatters are a wiser investment.

Disk Setup 1.0.4 is also tweaked to work only with "Apple-qualified" drives, but it handles IDE drives, unlike Apple HD SC Setup. The program does not support IDE drives on PC Cards, but, oddly, it supports some cartridge drives, which Apple does not sell. Both formatters now support the partitioning of drives, a feature that was missing from Apple's products for many years.

A major limitation of Disk Setup is that it runs only on certain Mac models. The program works with Power Macs and most Macs with internal IDE drives, but it refuses to work with Quadras, older PowerBooks, older desktop Macs or the IDE-based PowerBook 150. Its electronic documentation, in Apple Guide format, is inaccessible on Macs that Disk Setup does not support.

A major limitation of Disk Setup is that it runs only on certain Mac models.

In the weird world of Mac IDE, there are conflicts between different formatting schemes. Internal HD Format expects a drive without any partitioning information and mistakenly sees IDE drives as SCSI drives when they have partitioning data. Disk Setup expects and writes this partitioning data. If a drive lacks it, Disk Setup insists on reformatting the drive before recognizing and working with it. This turns into a Catch-22 on the PowerBook 150, which cannot run Disk Setup and cannot use Internal HD Format on a new drive that has partitioning information. In this case, you have to start from another drive and use a low-level utility, such as Symantec Corp.'s Norton Disk Editor, to zero out the partition data.

Docks, backups, copies

Moving on to some other system management topics, beware of a trap with Duo Docks and the new PowerPC-based laptops: Docks support both old and new Duos, but a NuBus networking card in the Dock may fail to function when you upgrade from a 680x0-based Duo to a new Duo, unless the networking card's driver software is also updated. The issue is compatibility with the new PowerPC processor. The original networking driver may work only with the older 680x0 CPU.

And on the backup front, there is one glitch with Dantz Development Corp.'s PCI- and System 7.5.3-friendly Retrospect 3.0 in a specific configuration: It fails with virtual memory or when Connectix Corp.'s RAM Doubler is enabled and more than 40 Mbytes of real RAM is installed. An update will be forthcoming, but in the meantime Dantz has a manual resource hack available to work around this "Assertion Check" problem if you cannot disable virtual memory and RAM Doubler.

Symantec has an update to CopyDoubler to make it work with System 7.5.3. The patcher, available online, takes Version 2.0.5 or Version 2.0.6 to the 7.5.3-savvy CopyDoubler 2.0.7. Earlier versions of CopyDoubler need a two-stage update, using a patcher to bring the utility first to Version 2.0.6 before applying the latest patch. □

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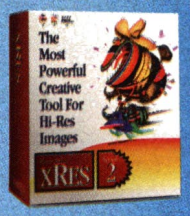

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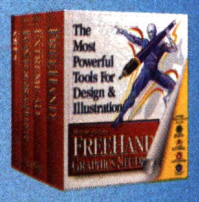

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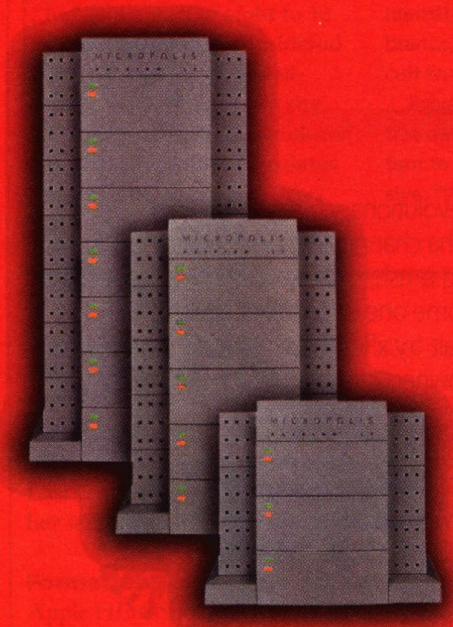

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RasterOps Horizon 24*	from $999
RasterOps 24XLTV	$1999
RasterOps Prism GT	$CALL
Radius PrecisionColor 8XJ	$499

*DSP Available

20/19" RESOLUTIONS

SuperMac Spectrum 24 Series V	$599
Radius PrecisionColor Pro 24XK	$CALL
SuperMac Futura MX	$499
RasterOps PaintBoard Lightning	$CALL
SuperMac Spectrum 8	$199
PowerView/SuperView for Powerbooks	$199/$299

17/16" RESOLUTIONS

Radius 24 bit video cards	from $199
Radius PrecisionColor Pro 24XP	$CALL
SuperMac Futura SX	$299
RasterOps 24 MX	$399

PHOTOSHOP ACCELERATION

Radius PhotoEngine from **$399***
- Four AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 15x acceleration on all Macs
- MacUser Editor's Choice
- Available in Daughtercard or NUBUS versions

Radius Photo Booster for Quadra/PDS or Rockets	from $199
SuperMac DSP daughter cards for Thunder/Ulturas	$299

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Video Vision Studio 2.5.1 **$1999***
- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere and VideoFusion
- Breakout bar supports dual input
- * with purchase of Studio Array

Video Vision Studio Array **$1999**
- 4GB RAID Customized for Video Vision
- Includes FWB Jackhammer SCSI accelerator
- Chain up to three Arrays together (4GB,8GB,12GB)

Video Vision Telecast from **$2999**
- Full-motion, broadcast-quality video
- Available as upgrade for Video Vision Users

miroMOTION DC20 M-JPEG PCI video capture & playback	$CALL
Truevision Targa 2000 PCI/NUBUS	$CALL
RasterOps 24XLTV	$1999
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RasterOps MoviePak II JPEG Daughtercard Upgrade	$CALL
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*With purchase of Adobe Premiere

CPU SPECIALS

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PowerMac Performa 6200 8/1000/CD from **$999***
- Power PC 603/75MHz RISC processor
- Ready for Apple TV/Video/Presentation Systems
- Internal quad-speed CD-ROM bay
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- Power PC 603/75MHz RISC processor
- Internal quad-speed CD-ROM drive with software

Power Macintosh 7100/80 8/700/CD **$1299*** from
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- Expandable, with three Nubus slots

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PowerMac 9500/120	from $2999
PowerMac 9500/132 & 150	$CALL

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Macintosh II 4/40 w/ video card installed	$299*

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- Macintosh IIsi with 5MB RAM/80MB HD
- Radius Color Pivot Display
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- FREE ClarisWorks! Complete system $799

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Add Apple Cache Card to Macintosh IIci	$39

Mac IIcx 15" Color System CPU only **$275**
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- Extended 105-key Keyboard
- FREE ClarisWorks! Complete system $849

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Add Ethernet card to Mac IIcx	from $99

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PowerBook 520c	from $1499
PowerBook 190 series	$CALL
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PowerBook Duo 270c/280c	$CALL
Ethernet Dock for Powerbook Duo's	$399*
Apple Duo Docks	from $499*
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* with purchase of a PowerBook

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Daystar PowerPC and 040 Accelerators	$CALL
Radius Rockets 33MHz to 40MHz	from $399
Stage Two Rocket 40MHz w/FPU	$699
-includes SCSI II Booster and RocketShare	
Rocketshare multiprocessing software	$299
Speed upgrades for all 680X0 and PPCs	$CALL

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Ask about Printers available in 220v!

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QMS ColorScript 1000 from **$1999**
- Internal SCSI drive
- Powerful RISC processor
- PostScript Level 1, 2 and HP/PCL-5

QMS Magicolor 600 dpi only **$2999**
Radius Proof Positive **$CALL**
- Award Winning dye-sublimation printer
- Full-bleed two page and one-page models
- True Adobe Postscript Level 2
- All consumables available

QMS ColorScript 210/230 from **$1199**
- Up to 11x17" full-bleed output

Tektronix Phaser 300i	$CALL
Tektronix 540 Plus color Laser	$CALL

TABLOID LASERS

QMS 860 Hammerhead 600-1200dpi from **$1999**
- 11 x 17 full bleed
- PostScript Levels 1&2
- 8ppm heavy-duty Canon engine
- Powerful RISC processor

Hewlett-Packard 4mv	$CALL
GCC SelectPress 1200x1200dpi	$4999
QMS PS2210/2220	$1499/$1699

- 20,000 page monthly duty cycle
- 22ppm • Dual-tray input

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QMS PS1500 / PS1700 for Macs and PCs **$1299** from
- True Adobe Postscript
- 15ppm to 17ppm output
- Dual Paper input
- 50,000 print monthly duty cycle

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GCC Elite 600et 10ppm, 600dpi, ethernet	$CALL
Apple Select 360 10ppm, 600dpi	$1199

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VIDEO CARD BUYING GUIDE - ALL HARD TO FIND CONFIGURATIONS ARE IN STOCK NOW!!

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Radius FPD Card	Mac Plus	Mono	–	–	–
Radius Pivot Card	SE/30	256	–	–	–
Xceed Color 30hr	SE/30	256	256	256	256
Lapis Color 16	SE/30	Thousands	Thousands	256	256
Lapis Color 24	SE/30	Millions	Millions	256	256
Radius Direct Color/gx	IIsi	Millions	–	–	–
SuperMac Spectrum 8	IIsi	256	256	256	256
SuperMac Spectrum 8.24	IIsi	Millions	256	256	256

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Radius FPD Card	Mac SE	Mono	–	–	–
SuperMac Superview	Mac SE	–	–	Mono	–
Radius TPD Interface	Mac SE	–	–	–	Mono
RasterOps 8/LC	LC/PDS	–	–	256	–
SuperMac Spectrum 8	LC/PDS	256	256	256	256
Lapis Color 16 for LC	LC/PDS	Thousands	Thousands	256	256
Micro Conversions 1724	LC/PDS	Millions	Millions	256	256
Lapis Color 24 for LC	LC/PDS	Millions	Millions	256	256

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Double Color SX	Nubus	256	256	16	–
RasterOps 708+	Nubus	256	–	256	–
RasterOps 24L	Nubus	Millions	–	–	–
RasterOps 8/LC	Nubus	–	–	256	–
SuperMac Spectrum 8	Nubus	256	256	256	–
Double Color LX	Nubus	256	256	256	256
Radius Direct Color 24	Nubus	–	–	–	Millions
E-machines Futura MX	Nubus	Millions	Millions	Millions	–

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CLUBMAC HARD DRIVES

Quantum

Backed by ClubMac's 30 DAY Money Back Guarantee

FIREBALL 1280MB

12ms Access Time
Internal Fireball C104 0001

$269

TRAILBLAZER 850MB

14ms Access Time
Internal TrailBlazer C104 0002

$189

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Capacity	Model	Part No.	Internal	Part No.	External
850MB	Trailblazer 14ms	C104 0002	$189	C104 0052	$249
1080MB	Fireball 12ms	C104 0000	$229	C104 0050	$289
1280MB	Fireball 12ms	C104 0001	$269	C104 0051	$329

$899

ATLAS 4.3GB 7200 RPM 1024K CACHE

Internal Atlas C104 0005

A Manufacturer's 5 Year Warranty

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Capacity	Model	Part No.	Internal	Part No.	External
2170MB	Saturn 8.5ms	C104 0011	$479	C104 0061	$539
2150MB	Atlas 8ms	C104 0004	$689	C104 0054	$749
4280MB	Atlas 8ms	C104 0005	$899	C104 0055	$959

Seagate

Backed by ClubMac's 30 DAY Money Back Guarantee

Seagate 5 YEAR Warranty

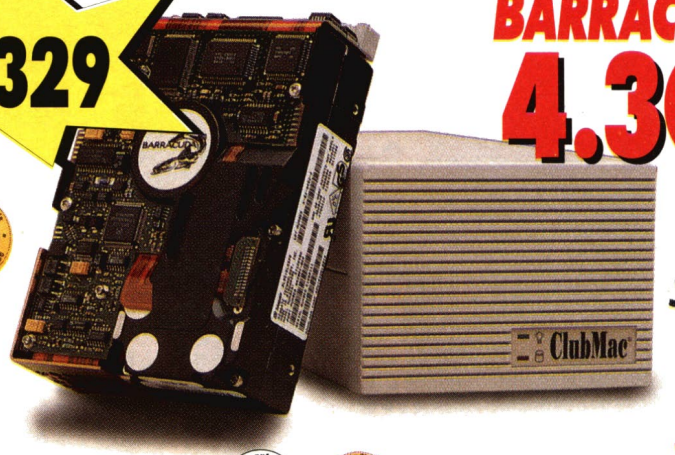
3.5" HALF HEIGHT & LOW PROFILE (LP)

Formatted Capacity	Model	Part No.	Internal	Part No.	External
1.0GB	Medalist 51080N	C104 0302	$269	C104 0352	$329
2.5GB	Barracuda 2LP 32550N	C104 0300	$729	C104 0350	$789
4.3GB	Barracuda 4 15150N	C104 0301	$1159	C104 0351	$1219
5.25" FULL HEIGHT					
9.1GB	Elite-9 410800N	C104 0305	$1999	C104 0355	$2099

CLUBMAC FAST & WIDE DRIVES

C104 0451

$1329



BARRACUDA 4 4.3GB

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Seagate 5 YEAR Warranty

Seagate

A Manufacturer's 5 Year Warranty

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2.1GB	Barracuda 2LP ST32150W	C104 0400	$799	C104 0450	$899
4.3GB	Barracuda 4 ST15150W	C104 0401	$1229	C104 0451	$1329
9.1GB	ELITE 9 ST410800W	C104 0402	$2099	C104 0452	$2219

Quantum

A Manufacturer's 5 Year Warranty

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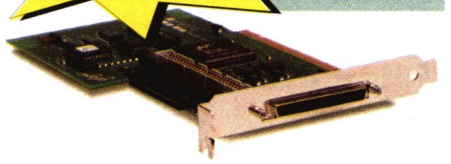
2150MB	Atlas XP32150SW	C104 0103	$749	C104 0152	$849
4280MB	Atlas XP34300SW	C104 0102	$999	C104 0153	$1099

qlogic Corp.



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Accelerate all internal and external storage devices on your computer! Hard drives, optical, tape, SyQuest, etc. Supports SCSI-1, SCSI-2, Fast SCSI-2, and Fast & Wide SCSI-2. SCSI manager 4.3 features built-in. Flash ROM upgradeable via software. Use to create the fastest arrays for Power Macintosh and Macintosh. Supports System 7.5 4GB volume size. Requires a full size NuBus slot or a PCI slot.

$389

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F094 1033	SCSI JackHammer PCI	$389
F094 1002	SCSI JackHammer NuBus	$459

CLUBMAC IDE DRIVES

Quantum

$249
C104 0007

EUROPA 810MB

A Manufacturer's 3 Year Warranty

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2.5" HEIGHT POWERBOOK DRIVES

Formatted Capacity	Model	Part No.	Internal
810MB	Europa IDE*	C104 0007	$249
1080MB	Europa IDE*	C104 0008	$319
3.5" HEIGHT DRIVES			
1280MB	Fireball IDE	C104 0012	$229

*Compatible with PowerBook 150 and 5300 series only.

CD RECORDABLE DRIVES

YAMAHA® 4X CD Recorder

NEW LOW PRICE

$1499
Y010 1002

A Manufacturer's 1 Year Warranty

0024 1001

$1299

OPTIMA TECHNOLOGY

DisKovery 650CDR

NEW PRODUCT

Y010 1002	Yamaha 4X CD Recorder w/Toast CD Mastering software	$1499
0024 1001	Optima DisKovery 650CDR2X CD Recorder	$1299
P074 1009	RCD-5040 2X Recordable CD System 2X Write/4X Read	$1249
M274 1002	PlayWrite 2X 2000 CDR w/Gear Multi-Platform Multimedia Software	$1149

CLUBMAC CD-ROM DRIVES

$169
C104 1700

Features:
600KB/sec data transfer
190ms avg access time
Caddy-less design

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C104 1700 **ClubMac 4.4X-Speed CD-ROM Drive** $169

ClubMac®

		Access time	Trans Rate	
C104 1600	ClubMac Six-Speed CD-ROM Drive	140ms	900k/sec	$299
C104 1700	ClubMac 4.4X-Speed CD-ROM Drive	140ms	600k/sec	$169
C104 1400	ClubMac Classic 2X CD-ROM Drive	250ms	300k/sec	$79

NEC

		Access time	Trans Rate	
N024 1062	MultiSpin 6Xe CD-ROM Reader	150ms	900k/sec	$479
N024 1070	MultiSpin 4Xc 7 Disc Changer	350ms	600k/sec	$339
N024 1011	MultiSpin 3Xp plus Portable CD-ROM	240ms	500k/sec	$349

NEC

$339
N024 1070

MultiSpin 4Xc 7 Disc Changer
Load 7 Discs at a time!

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N024 1070 **NEC MultiSpin 4Xc 7 Disc Changer** $339

CLUBMAC REMOVABLE STORAGE

ClubMac 200 MB SyQuest® Drive

Mac OS COMPATIBLE

$299* C104 1801

C104 1801 **ClubMac 200MB 5.25" Removable** **$299***

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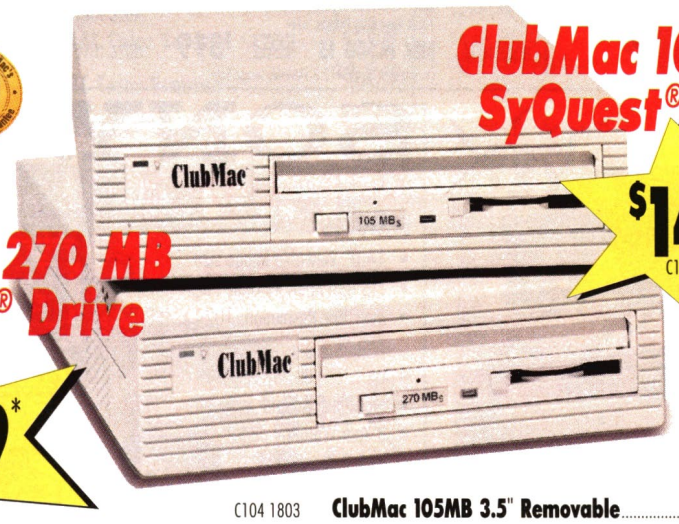
ClubMac 105 MB SyQuest® Drive



Mac OS COMPATIBLE

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$149 C104 1803

ClubMac 270 MB SyQuest® Drive

$299* C104 1802

*With purchase of 270MB cartridge.

C104 1803 **ClubMac 105MB 3.5" Removable** **$149**

C104 1802 **ClubMac 270MB 3.5" Removable** **$299***

SyQuest® EZ135 Drive

EZ135 Drive™

Includes One Free Cartridge

$199 S198 2001

2 FREE CARTRIDGES (Buy a SyQuest EZ135 and SyQuest will send you an additional cartridge)*

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Mac OS COMPATIBLE

S198 2001 **SyQuest EZ135 135MB 3.5" Removable** **$199**

* Drive includes one cartridge, a mail-in coupon for 2nd cartridge is included. Offer ends 7/31/96.

NEW LOW PRICES ON GENUINE SyQuest Cartridges

FEATURING SyQuest® REMOVABLE TECHNOLOGY

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SyQuest Media

Part Number	Media	Qty 1	Qty 10	Qty 20
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S198 1011	88MB	$44ea	$43.50ea	$43ea
S198 1012	200MB	$69ea	$68ea	$67ea
S198 1013	105MB	$35ea	$34.50ea	$34ea
S198 1014	270MB	$57ea	$56ea	$55ea
S198 2010	EZ135MB	$19ea	$18.50ea	$18ea

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I040 1006	1 Pack	$19.99
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Zip Drive

Includes One Free Cartridge

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1 Year Manufacturer's Warranty

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C104 1301	**ClubMac 4-8GB DDS-2 DAT Drive**	$829
C104 1200	**ClubMac 4-8GB DDS-2 SuperDAT Drive**	$1059
C104 1302	**ClubMac 4-8GB Performance DAT Drive**	$1079
C104 0200	**ClubMac 40GB DLT Subsystem DLT 4000**	$4569
S100 1043	**Sony QW3080XLF QIC/WIDE 2-4GB Cartridge**	$29
V010 1018	**Verbatim 90M 4mm DAT Cartridge 2-4GB**	$9
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- Six PCI expansion slots
- 4X CD-ROM Drive, ADB Mouse, and Apple floppy drive
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- 512k Cache
- Multi-processor Plug-ins for: Adobe Photoshop, After Effects, Strata StudioPro Blitz & Kodak KCMS/Photo CD/Quick-time

NEW PRODUCT

*Monitor & keyboard not included.

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NEC

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NEW PRODUCT

$299 N026 102

- 14" AntiStatic, Non-glare CRT
- .28mm dot pitch
- Max Resolution: 832x624

Manufacturer's 1 Year Warranty

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N026 1031	**15" MultiSync XV15+** 13.8 Viewable Image Size	$469
N026 1036	**NEC M500 15"** NEW PRODUCT Chromaclear Monitor-13.8 Viewable Image Size	$599

17" MultiSync XV17+

$799 BEST BUY

N026 1032

FEATURES

- 17" Flat Square Technology CRT
- 15.6" Viewable Image Size
- MAC Resolution up 1024 x 768 NI
- 0.28 mm dot pitch
- On-Screen Manager

N026 1032	**17" MultiSync XV17+**	$799
N026 1007	**17" NEC XE17**	$999
N026 1009	**17" NEC XP17**	$1049
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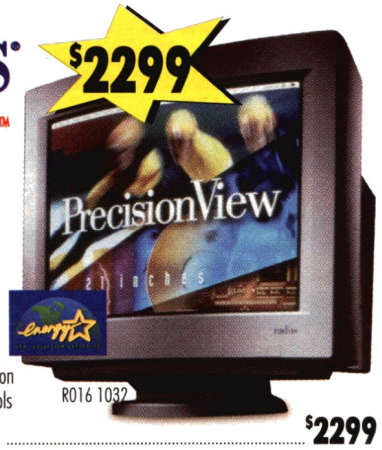

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- .30mm Dot Pitch
- Energy Star Compliant
- Capable of 1600 x 1200 resolution
- On Screen display of digital controls

R016 1032

R016 1032	**PrecisionView™ 21**	$2299
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ViewSonic®

17GA PerfectSound Multimedia Monitor

$799

V056 1016

FEATURES

- HiFi Speakers built in
- 17" (15.7" Viewable Image Size)
- Max Res: 1280 x 1024
- PC and Mac compatible

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V056 1020	**ViewSonic PT770 Monitor**	$899

SONY

Multiscan 17SFII

$915

FEATURES

- 16.0" Viewable image size
- .25 mm Aperture Grille Pitch
- Max Mac Resolution: 1024 x 768 ™ 75hz
- On screen display of screen controls
- Macintosh Adapter included
- 3 Year Warranty parts and 2 Year CRT

S106 1018	**Sony Multiscan 17SFII**	$915
S106 1017	**Sony Multiscan 15SFII**	$495

VIDEO CARDS

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R013 1070

$799

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ATI's renowned *mach64* graphics acceleration chip gives the XCLAIM GA its exceptional abilities. It features 2MB or 4MB of VRAM,& displays up to 16.7 million accelerated colors at 1152x870.

A143 1010

A143 1010	**ATI XCLAIM GA** 2MB PCI video card	$289.99
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N080 1003 **$729**

Designed for Macintosh computers with PCI

- 128-bit graphics engine
- 128-bit internal data path
- 128-bit memory bus
- Exclusive WideBus™ design means drawing pathways are a full 128-bits wide from processor to high speed VRAM

N080 1002	**Imagine 128** 8MB Accelerator	$1169
N080 1003	**Imagine 128** 4MB Accelerator	$729

DIGITAL VIDEO

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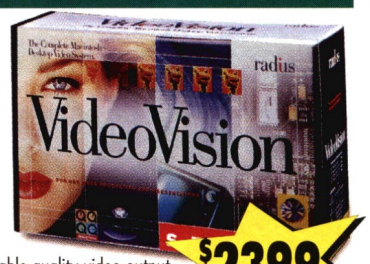
VideoVision Studio 2.5.1



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Broadcast-Quality Video

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VideoVision Studio can now simultaneously capture video with 16-bit, 44.1 KHz stereo sound using the on-board audio of the Power Macintosh.

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NOW AVAILABLE!

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R013 1077 **Telecast Upgrade** $3459

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Targa 1000 Digital Video Editing

$2699 T043 1003

Transform Your Desktop Computer into a Powerful Digital Video Editing System.

...Easily and Affordably!

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T043 1001	**Targa 2000** (PCI Power Macintosh) (* as low as $2995 w/qualified trade-in)	$2995*

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SPECIAL

16MB 4x32 SIMM

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M101 1072	**16MB 72 Pin Simm**	$299
M101 1081	**8MB Dimm**	$149
M101 1082	**16MB Dimm**	$299

ACCELERATORS

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Runs your current software up to twice as fast, and runs PowerPC applications 7 to 11 times faster.

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Reli 4830 Mac/TE Color Scanner

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30 Bit Transparency Adapter Included!

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R060 1004 **Reli4830 MAC/TE Color Scanner** $899

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UMAX Powerlook II

The Magic of Color™

FEATURES

- 36-bit color scanning
- 600 x 1200 dpi
- 3.3 Dynamic Range
- Includes Transparency Adapter
- Package includes: Adobe Photoshop, KAI's PowerTools SE, PowerPhotos CD, WordLinx OCR, Pixar Typestry, & Pixar 128CD

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1 Year Manufacturer's Warranty

U010 1052 **PowerLook II** 36-bit color scanning, 600 x 1200 dpi $2495

U010 1055 **Vista-S12 LE** $799

VISIONEER PaperPort Vx

FEATURES

- 6 second typical scan time
- 400 dpi resolution
- 256 Gray-scale imaging
- Scan Documents up to 30" long
- Includes OmniPage Lite, CardScan SE, PictureWorks Copier

MACWORLD MW★★★★★

30 DAY MONEY BACK GUARANTEE

$279

V029 1008 **PaperPort Vx for Macintosh** $279

EPSON ES1200C Pro

E045 1003 $1179

FEATURES

- 600 dpi optical resolution,
- 30-bit color scanning
- Pro Package includes: Adobe Photoshop, Scantastic, KAI's PowerTools, SCSI cable

2 WARRANTY

E045 1003 **Epson ES1200C Pro-MAC Color Scanner** Full Package $1179

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- Single-pass, 2700 dpi, 24-bit, 35mm Desktop Film Scanner
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1 Year Manufacturer's Warranty

N045 1008 **Coolscan II** $1199

MICROTEK ScanMaker III

Better Images Through Innovation.

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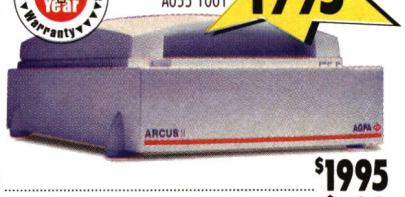
FEATURES

- 600 dpi & 36-bit color scanning
- Includes Transparency Adapter
- Single pass scanning
- DCR (Dynamic Color Rendition) calibration/correction system
- Apple ColorSync compatible
- Package includes Adobe Photoshop

M150 1006 **Microtek ScanMaker III** $1989

Arcus II AGFA



FEATURES

- 600 dpi & 36-bit color scanning
- 3.0 Dynamic Range
- Includes Transparency Module
- Package includes:
  - Adobe Photoshop
  - Agfa FotoLook Scanner driver software
  - Agfa FotoTune Color Management software

1 Year Manufacturer's Warranty

A055 1001 $1995

A055 1001 **AGFA Arcus II** $1995

A055 1011 **AGFA StudioScan IIsi** $699

PRINTERS

EPSON Stylus Color Pro

2 WARRANTY

FEATURES

- 720 x 720 dpi photo quality on plain paper
- PostScript upgradeable
- True black laser text
- Pantone matching
- Text print speed up to 3ppm, color 1ppm

$499 E047 1019

E047 1019 **Epson Stylus Color Pro** $499

E047 1018 **Epson Stylus Color II** $299

Epson Stylus Color Pro XL

FEATURES

- Prints up to 12.5" x 18" full bleed Photoquality color
- 720 x 720 dpi photo quality with I technology
- Optional Adobe PostScript with Pantone Color Calibration

$1799 E047 1022

E047 1022 **Epson Stylus Color Pro XL** $1799

HEWLETT PACKARD HP LaserJet 5MP

FEATURES

- 600 x 600 dpi laser printing with HP Resolution Enhancement technology
- 120 levels of grey
- 6 ppm print speed
- 3MB RAM standard, expandable up to 35 MB w/Adobe Memory booster
- Adobe PostScript level 2 with 35 scale typefaces

$1045

1 Year Manufacturer's Warranty

H047 1030 **HP LaserJet 5MP Printer** $1045

HP DeskJet 855Cxi Printer

Features

- *COLOR PRINTER*
- Dual I/O for PC or Macintosh connection
- Black print speed up to 7ppm
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- Handles plain and special papers, transparency film, and envelopes

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NEW PRODUCT

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5 Year Manufacturer's Warranty

U020 1021 **US Robotics 28.8 Sportster for Mac** $195

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Supra 28.8 Ext V.34

Supra Corporation

$195

FEATURES

- V.34 and Flash ROM technology
- Includes caller ID, Silent Answer Fax and Voice Line Sharing
- FAXcilitate fax software, MicroPhone LT data software and CompuServe Information Manager software
- 28.8 kbps data speed with maximum throughput of 115, 200 bps, 144.4 send/receive fax
- V.42bis data compression MNP 2- & 10 error correction

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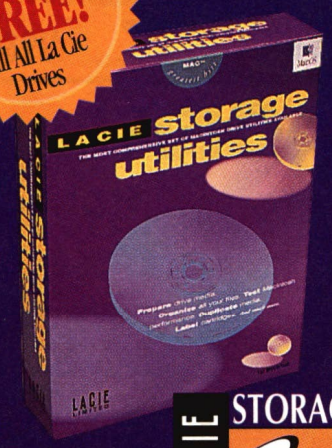

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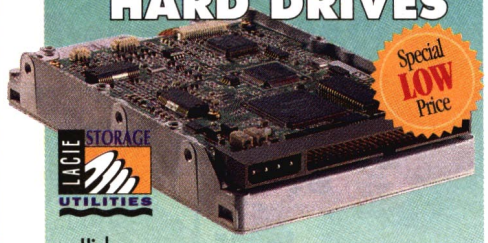

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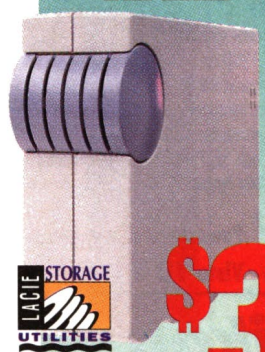

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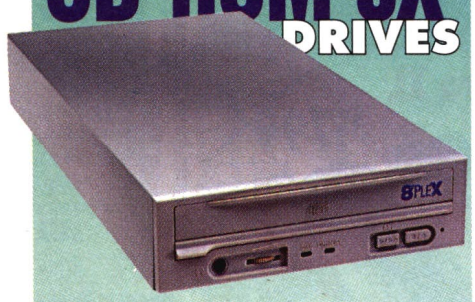

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- Transfer rates up to 1200kb/sec.
- Smooth audio and video playback.

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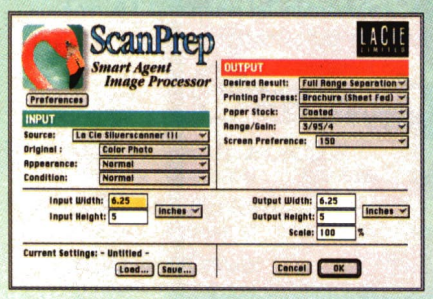
Highest Possible Rating



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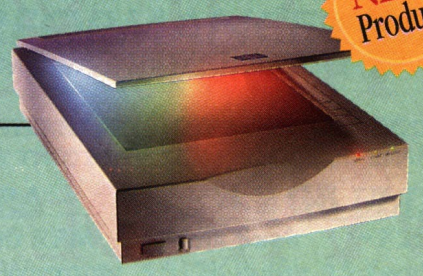

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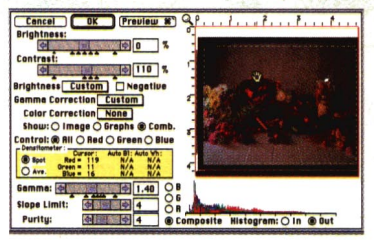

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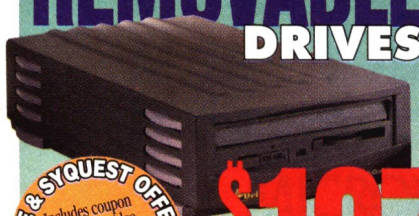

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1080MB Tsunami External	$299	30
1.2GB Seagate Internal	$199	2
2.4GB Seagate Int. (unformatted)	$429	3
4.3GB Quantum Int. (unformatted)	$839	8
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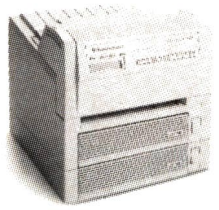

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1080 MB *Fireball*			**255**	**315**
11 ms Seek	5400 RPM	128K Buffer	3 Year Warranty	
1280 MB *Fireball II*			**265**	**325**
11 ms Seek	5400 RPM	128K Buffer	*5 Year Warranty*	
2.2 GB *Saturn*			**520**	**585**
8.5ms Seek	5400 RPM	1024K Buffer	5 Year Warranty	
2.0 GB Atlas *New Low Price!*			**675**	**735**
8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
4.3 GB Atlas			**925**	**985**
8ms Seek	7200 RPM	2048K Buffer	5 Year Warranty	

Fast & Wide SCSI AV Drives

2.0 GB ATLAS			**739**	**799**
8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
4.2 GB ATLAS			**995**	**1055**
8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	

CONNER

1060 MB *Quiet & Reliable*			**$265**	**$325**
9 ms Seek	5400 RPM	512 KBuffer	5 Year Warranty	
2.1 GB *Fast AV Performance!*			**695**	**755**
8 ms Seek	7200 RPM	512K Buffer	5Year Warranty	
2.1 GB *Fast & Wide -AV Performance*			**825**	**925**
8 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
4.2 GB *Fast AV Performance!*			**975**	**1035**
8 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
4.2 GB *Fast & Wide -AV Performance*			**1075**	**1175**
8 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	

MICROPOLIS

GOLD Series AV Drives ***Recommended most for AV work***

2.1 GB • ***Also Available in Fast & Wide SCSI 2***			**589**	**649**
Fast SCSI 2 8.5 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
4.3 GB • ***Also Available in Fast & Wide SCSI 2***			**985**	**1045**
Fast SCSI 2 8.5 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	
9.0 GB • ***Also Available in Fast & Wide SCSI 2***			**1895**	**1995**
Fast SCSI 2 11ms Seek	5400 RPM	512K Buffer	5 Year Warranty	

SyQuest TECHNOLOGY

DRIVES			CARTRIDGES	
Capacity	***Model***	***External***	***Capacity***	***Price***
88 MB	SQ5110C	**$255**	**44 MB**	**$40**
135MB	SQEZ135	**195**	**88 MB**	**44**
200 MB	SQ5200	**325**	**135 MB**	**19**
270 MB	SQ3270	**339**	**200 MB**	**69**
			270 MB	**56**

AV SPEED • PRODIRECT PRICES • 90 DAY PERFORMANCE GUARANTEE!

- ***INDUSTRY LEADING IBM PATENTED MR HEAD TECHNOLOGY PRODUCES THE BEST TRANSFER RATES AVAILABLE TODAY!***
- ***IDEAL FOR YOUR MOST INTENSE AV OR DTP NEEDS...AN IDEAL SCRATCH DISK***
- ***1,000,000 HOURS MEAN TIME BETWEEN FAILURE , 5 YEAR WARRANTY, 1 YEAR ADVANCE EXCHANGE***

2.2 GB *ULTRA*

- **8 ms Seek**
- **7200 RPM**
- **512K Buffer**
- **5 YearWarranty**
- ***MR Head Technology***

All drives come preformatted with FWB for Maximum performance in AV and DTP environments.

$525 INTERNAL ***$585*** EXTERNAL

4.2 GB *ULTRA*

- **8 ms Seek**
- **7200 RPM**
- **512K Buffer**
- **5 YearWarranty**
- ***MR Head Technology***

All drives come preformatted with FWB for Maximum performance in AV and DTP environments.

$895 INTERNAL ***$955*** EXTERNAL

540 MB IBM *DESKSTAR*

- 9 ms Seek
- 5400 RPM
- 128K Buffer
- 5 Year Warranty

$155 INTERNAL ***$215*** EXTERNAL

1080 MB IBM *STARFIRE*

- 8 ms Seek
- 7200 RPM
- 512K Buffer
- 5 Year Warranty

$279 INTERNAL ***$339*** EXTERNAL

MW ★★★★

MW EDITORS' CHOICE

PDC2400
- **8 ms Seek • 7200 RPM**
- **512K Buffer • 5 YearWarranty**

$725 Internal $785 External
Conner 21075 Mechanism

"Like an eye catching sports car, this 2.4 GB looks and goes fast"

Stackable • Active Termination

Featured Products

535 MB *Performance !*			**$175**	**235**
9 ms Seek	5400 RPM	512K Buffer	5 Year Warranty	
Quantum 1280 MB *Fireball II*			**$265**	**$355**
11 ms Seek	5400 RPM	128K Buffer	*5 Year Warranty*	
PDI 2.2GB Ultra XP			**$735**	**$845**
8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
Seagate 4.2GB *Barracuda 4*			**$1025**	**$1085**
8 ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
Seagate 9.0 GB Elite			**$1965**	**$2065**
11 ms Seek	5400 RPM	1024KBuffer	5 Year Warranty	

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New! FWB JackHammer **$455**
Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec. and fast SCSI 2 (8 Bit) transfer rates up to 10 MB/sec.

New! FWB PCI JackHammer **$385**
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Your best solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec.

FWB RAID Toolkit.....Call!

Adaptec 2940WM **$295**
Adaptec's Power Domain 2940W-PCI to Fast/Wide SCSI 3 Accelerator. Increase transfer rates up to 20MB/sec. Ideal for Disc Arrays.

Atto Express PCI **$345**
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Ideal solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec.

Atto Silicon Express 2 **$485**
SCSI 1&2 supports transfer rates up to 10.0 MB/sec., multiple block sizes, parallel processing capability.Ideal for graphic design, multimedia applications.

Atto Silicon Express 4 **$829**
Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/second. Full 16 Bit wide support for disk arrays.

REMUS Disk Array RaidLevel 0 - 5 **$Call**

Seagate

1080 GB			**$265**	**$325**
9 ms Seek	5400 RPM	512 KBuffer	5 Year Warranty	
2.5 GB Barracuda 2			**710**	**765**
8 ms Seek	7200 RPM	1024K Buffer	5Year Warranty	
4.3 GB Barracuda 4 *New Price!*			**1165**	**1205**
8 ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
2.5 GB Fast & Wide Barracuda 2			**755**	**855**
8 ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
4.3 GB Fast & Wide Barracuda 4			**1185**	**1285**
8 ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	
9.0 GB Elite			**1899**	**1999**
11 ms Seek	5400 RPM	1024KBuffer	5 Year Warranty	
9.0 GB Fast & Wide Elite			**2075**	**2175**
11 ms Seek	5400 RPM	1024KBuffer	5 Year Warranty	

90 Day Performance Guarantee !!

Tape Backup Drives

All ProDirect Tape Drives Include The Latest Version of Retrospect and 1 Piece of Media.

HEWLETT PACKARD

Capacity	***Model***	***Media***	***Int.***	***Ext.***
2.0 GB	35470	4mm	**$925**	**$985**
3-5 GB	35480	4mm	**995**	**1055**
4-8 GB	1533A	4mm	**1235**	**1295**
24-48 GB Auto Tape Loader	1553A		**3195**	**3295**

Exabyte

Capacity	***Model***	***Media***	***Int.***	***Ext.***
2-5 GB	8205XL	8mm	**$1395**	**$1485**
7-14 GB	8505XL	8mm	**2055**	**2115**

Quantum *DLT*

Fastest Drives Made Today!

DLT2000XT **$3199**
30GB Capcity • *TRANSFER RATE 150 MB PER MINUTE*

DLT4000 **$4925**
40GB Capcity • *TRANSFER RATE 180 MB PERMINUTE*

DLT4500 • ***200 GB Capacity*** **$8899**
TRANSFER RATE 180 MB PERMINUTE

DLT4700 • ***280 GB Capacity*** **$11395**

CD ROM & CD WRITERS

4x Toshiba CD ROM 150 MS seek	**$235**
4 x 6 Disk Pioneer CD ROM Changer	**$339**
6.7x Toshiba CD ROM *New Price!* 102 ms Seek256 K Cache	**$295**
2x Yamaha CDE 1020 2x CD Writer• 4x CD ROM	**$795**
4 x Yamaha CDE 100 *New Price!* 4 x CD Writer•Multisession•Selectable Speed	**$1275**

Includes TOAST PRO CD Writer Software
Prices are external and include all cables and software for a PLUG & PLAY Solution.

All prices are subject to change without notice. Returned products are subject to a restocking fee. International customers pay all shipping charges. All shipping charges are non-refundable. To return merchandise call for an RMA number. All RMAs must be returned within 10 business days of issuance. Customers are responsible for all returned product shipping charges.

GREAT PRODUCTS... PRICELESS SUPPORT

APS Technologies

A GREAT PRICE ON CD-R!

JUST $799.95 External configuration

APS CD-R

- ✔ Uses CD media with 100-year shelf life
- ✔ Random access gives you fast retrieval

At the lowest price ever for Sony 2x CD-R technology, the APS CD-R is a fantastic value for authoring, mastering or backing up to CDs. CD-R media costs less than 2¢ per MB and has an estimated 100-year shelf life. The APS CD-R is based on Sony's CDU-920S mechanism with its giant 1MB cache buffer, and supports packet writing and all popular CD formats specified in the Orange Book Part II. The APS CD-R comes with a FREE copy of the award-winning TOAST CD-ROM Pro CD recording software.

A $500 value – FREE

650MB OPTICAL & 4X CD-ROM AT ONE LOW PRICE

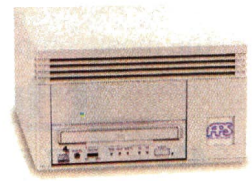
APS PD4

Limited quantities, order now!

- ✔ Combines removable optical storage and backup with CD-ROM in one device!
- ✔ Accepts 650MB rewritable optical cartridges and CD-ROMs interchangeably

GREAT PRICE $499.95 External configuration

The new APS PD4 is the most versatile drive available for your Mac. Combining a fast 4X CD-ROM player with rewritable 650MB optical cartridge drive, the APS PD4 saves a SCSI address while performing these two important desktop functions.



THE ULTIMATE SYSTEM FOR CD-R MASTERING

APS CD-R Mastering System 2.0

- ✔ High-performance 4X CD-R drive & high-performance 2GB AV drive
- ✔ Free copy of TOAST CD-ROM Pro – a $500 value

$2499.95 External configuration

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The ultimate goal when burning CD-R media is a successful burn on the first try, minimizing wasted media, and our new high-performance CD-R Mastering System helps you meet that goal. Combined in a single full-height enclosure, you'll find a high-performance 4X/4X CD-R drive and either 2GB or 4GB of high-performance AV storage. You'll also receive a FREE copy of TOAST CD-ROM Pro recording software – a $500 value – to complete the task.

APS SYQUEST DRIVES

Model	Capacity/Feature	Awards	Internal	SR2000
APS SQ 5200	194MB Compatible with 200, 88 and 44MB cartridges	MacUser LABS ★★★★½	N/A	$349.95

APS CD-ROM DRIVES

Model	Features	Awards	Internal	SR2000
APS T 3701	6.7X-SPEED Sustained data transfer rates up to 1000KB per second!	Power Matched for PowerPC	$249.95	$299.95
APS PD4	CD-ROM/Removable Optical 650MB optical storage with 4X CD-ROM in one device		N/A	499.95*
APS CD-R	Recordable CD-ROM FREE TOAST CD-ROM Pro recording software ($500 value)	New Low Price	N/A	799.95*
APS CD-R Pro	4X4 Performance CD-R FREE TOAST CD-ROM Pro recording software ($500 value)	New Low Price	N/A	1799.95**
APS CD-R Mastering System 2.0	4X read/4X write recording engine and a 2GB AV scratch disk		N/A	2499.95*
APS CD-R Mastering System 4.0	4X read/4X write recording engine and a 4GB AV scratch disk		N/A	2999.95*

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Early Summer 1996 CATALOG

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APS QIC & DAT TAPE BACKUP SYSTEMS

Model	Capacity/Features	Awards	Internal	SR2000
APS HyperQIC™	2GB QIC 3080 Mechanism	MacWeek ★★★★ MacUser LABS ★★★½	N/A	$499.95
APS DAT	2GB DDS-1 Non-Compression Mechanism		$649.95	699.95
APS HyperDAT®	8GB DDS-2 Compression Mechanism	Power Matched for PowerPC	849.95	899.95
APS HyperDAT® Pro	8GB DDS-2 High-Speed Mechanism	Power Matched for PowerPC	1049.95	1099.95

APS MO DRIVES

Model	Capacity/Features	Awards	SR2000
APS 230MB MO	4500 rpm drive/230MB	MacUser LABS ★★★★	$449.95
APS 2.6GB MO	4MB cache/2.6GB	Power Matched for PowerPC	1799.95

APS HyperDAT®

GREAT PRICE

- ✔ Up to 8GB of storage on one 120m DAT tape‡
- ✔ High transfer rates of up to 28MB per minute‡
- ✔ Compatible with all DDS-1 and DDS-2 media
- ✔ Includes Retrospect 3.0 backup software – FREE

$899.95 External configuration

Delivering backup speeds as high as 28MB per minute, this DDS-2 backup system can pack up to an incredible 8GB on a single 120m DAT tape!* The APS HyperDAT is compatible with other DDS-1 DC and DDS-2 DC drives. Perfect for office and network backup and archiving!

‡With hardware compression *Assumes 2:1 compression ratio

APS DLT TAPE BACKUP SYSTEMS

Model	Capacity/Features	Awards	Full-Height
APS DLT30	30GB Digital Linear Tape Mechanism	Power Matched for PowerPC	$3499.95
APS DLT40	40GB Digital Linear Tape Mechanism	Power Matched for PowerPC; MacUser Editors' Choice Award 1995 FINALIST	5499.95
APS DLT4500	200GB Digital Linear Tape Loader		8899.95

All APS tape drives include Retrospect® by Dantz®

APS MEDIA SALE

3M

		SALE PRICE
106148	2.6GB MO CART.	$99.95
105202	PD 650 CART.	49.95
1017-650	74MIN. CD-R MEDIA	9.95

	SALE PRICE
DLT III CARTRIDGE	$39.95
DLT IV CARTRIDGE	99.95

SONY

		SALE PRICE
106151	3-PK 128MB MO	$59.95
106152	3-PK 230MB MO	79.95

maxell

	SALE PRICE
60M DAT	$5.95
90M DAT	9.95
120M DAT	24.95

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These products are performance-matched for optimal performance in the PowerPC environment.

*Available only in full-height case

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APS Q 1080

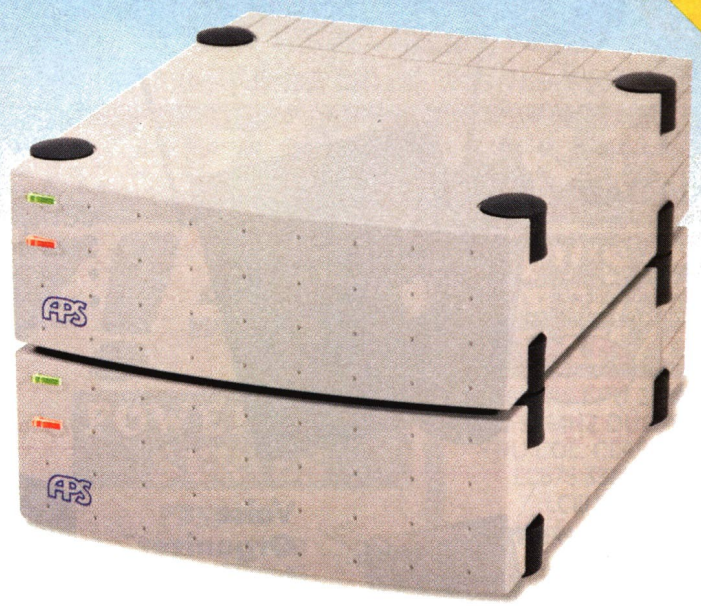
JUST $229.95 While Quantities Last

Internal configuration

- ✔ Well suited for home and office use
- ✔ Great for AV and non-AV applications
- ✔ 3.93MB/sec. sust. read, 4.27MB/sec. sust. write
- ✔ PRML technology delivers more storage to powerful CPUs & applications

Quantum · MacWEEK · MacUser ZD LABS ★★★★

For an incredible value in 1GB drives, look no further than the APS Q 1080. It is backed by a 3-year warranty and supports a 500,000 hour MTBF. If you're ready to take a step forward in drive capacity and performance, the APS Q 1080 makes that step an easy one to take.



7200 RPM PERFORMANCE, 5400 RPM PRICE

GREAT PRICE

APS MS 2000

$469.95 Internal configuration

MICROPOLIS

- ✔ 7.31MB/sec. sust. write, 4.54MB/sec. sust. read
- ✔ 5400 rpm mechanism
- ✔ Performs like a 7200 rpm drive
- ✔ 5-year warranty

This incredible drive has the performance you'd expect from a 7200 rpm mechanism but with a 5400 rpm drive's price – and reliability! The APS MS 2000 formats to 2047MB, delivers sustained reads at up to 4.54MB/sec. and sustained writes at up to 7.31MB/sec, has an average access time of 20 ms and average seek of 9.6 ms. It has a 5-year warranty and is rated at 650,000 MTBF.

4GB OF STORAGE FOR ONLY

APS Q 4.0

JUST $899.95 Internal configuration

Quantum

- ✔ Embedded servo eliminates thermal recalibration
- ✔ 7200 rpm mechanism delivers high transfer rates
- ✔ 2MB cache buffer boosts performance
- ✔ 5-year warranty

Using an embedded servo as well as a high-performance 7200 rpm mechanism, the APS Q 4.0 is equally at home with AV and non-AV applications. It is based on the Quantum Atlas XP 34300 mechanism with a 4300MB formatted capacity. The drive employs a huge 2048KB cache buffer and a unique cache-management algorithm to push data transfer rates as high as 10MB per second.

MacWorld Magazine World Class Award

MacUser Editor's Choice Award

Consultants Choice Award

APS SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS Q 840 Quantum 840 Trailblazer	811MB 4500 rpm	MacUser ZD LABS ★★★★	$189.95	NEW LOW PRICE $259.95
APS Q 1080* Quantum 1080 Fireball	1042MB 5400 rpm	MacWeek ◆◆◆◆ MacUser ZD LABS ★★★★	229.95	NEW LOW PRICE 289.95
APS Q 1280 Quantum Fireball II 1280	1222MB 5400 rpm	MacUser ZD LABS ★★★★	269.95	369.95
APS I 2160 IBM Ultrastar ES	2063MB 5400 rpm		479.95	579.95
APS MS 2000 Micropolis 4421	2047MB 5400 rpm		469.95	NEW LOW PRICE 569.95
APS Q 2210* Quantum Capella	2047MB 5400 rpm	MacUser ZD LABS ★★★½	599.95	699.95
APS ST 4200 Seagate ST 15230N Hawk	4094MB 5400 rpm	MacUser ZD LABS ★★★★	889.95	NEW LOW PRICE 989.95

While supplies last

APS IDE DRIVES FOR MACINTOSH

Model	Capacity/Features	Internal
APS Q 1280A Quantum Fireball II 1280	1222MB 5400 rpm (Fast ATA-2)	NEW LOW PRICE $229.95
APS ST 2140A Seagate Medalist ST32140A	2167MB 5400 rpm (Fast ATA-2)	349.95

To receive an automated fax listing of all APS documents, call 800-374-5802 from any touch-tone telephone.

Then call 816-920-4150 from a fax machine with a handset or fax modem and follow the instructions.

APS HIGH-PERFORMANCE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0 Micropolis 4221	1955MB 7200 rpm	MacUser ZD LABS ★★★½	$549.95	$649.95
APS MS 2.0AV Micropolis 4221AV	1955MB 7200 rpm		649.95	749.95
APS Q 2.0 Quantum Atlas XP32150	2050MB 7200 rpm	MacUser ZD LABS ★★★★	699.95	799.95
APS ST 2.0 Seagate ST 32550N	2047MB 7200 rpm		749.95	849.95
APS MS 4.0 Micropolis 3243	4064MB 7200 rpm	MacUser ZD LABS ★★★★	899.95	999.95
APS Q 4.0 Quantum Atlas XP34300	4101MB 7200 rpm	MacUser ZD LABS ★★★★½	899.95	NEW LOW PRICE 999.95
APS MS 4.0AV Micropolis 3243AV	4064MB 7200 rpm		999.95	1099.95
APS ST 4.0 Seagate ST 15150N	4094MB 7200 rpm	MacWeek ◆◆◆◆ MacUser ZD LABS ★★★½	1099.95	NEW LOW PRICE 1199.95
APS MS 9.0 Micropolis 1991	8669MB 5400 rpm		1899.95	2099.95*
APS MS 9.0AV Micropolis 1991AV	8669MB 5400 rpm	MacUser ZD LABS ★★★★	1999.95	2199.95*
APS ST 9.0 Seagate ST410800N	8669MB 5400 rpm		NEW LOW PRICE 2099.95	2299.95*

- 30-day money-back guarantee on all APS brand products. Your risk is the cost of shipping.
- Drive-for-Drive Repair or Replacement Warranty: APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.
- Refused orders subject to 20% restocking fee.
- Listed capacities are formatted.
- Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
- Internal hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh where applicable. External SCSI-2 drives come with a premium SCSI cable, power cord and user guide.
- All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, and APS Technologies' APS PowerTools SCSI formatter/hard disk partitioner. You may need to install system software appropriate to your machine before use.
- Prices and specifications are subject to change without notice. Not responsible for typographical errors.
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APS FAST/WIDE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0W Micropolis 4221W	1955MB 7200 rpm		$649.95	$749.95
APS Q 2.0W Quantum Atlas XP32150W	2050MB 7200 rpm		799.95	899.95
APS MS 4.0W Micropolis 3243W	4064MB 7200 rpm		999.95	1099.95
APS Q 4.0W Quantum Atlas XP34300W	4101MB 7200 rpm		999.95	NEW LOW PRICE 1099.95

FAST/WIDE ADAPTER CARDS

Model	External SCSI Connection	Internal
QLogic Fast!SCSI Mac PCI-W Adapter for Fast/Wide drives	HD 68-Pin	$379.95
SiliconExpress IV For NuBus Quadras & Power Macs only. Fast/Wide adapter card.	HD 68-Pin	849.95

APS POWERBOOK DRIVES

Model	Capacity/Features	Internal
APS Q 810 Quantum Europa	778MB 3800 rpm, IDE – Fast ATA-2	NEW LOW PRICE $339.95
APS Q 1.08 Quantum Europa	1037MB 3800 rpm, IDE – Fast ATA-2	NEW LOW PRICE 429.95
APS I 1.2 IBM Travelstar DPRS-21215	1200MB 4900 rpm, SCSI-2	699.95

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900 ITAD

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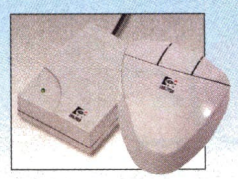
- Exceptional clarity
- Four programmable digital voice mailboxes

Reduced Price

106031 **$279.95**



Cordless MouseMan®

- Operates up to six feet away from its receiver
- Works even without a clear path to the receiver

106052 **$79.95**

Compact Disc Storage System

SPECIAL

- Safely stores up to 40 CDs
- Uses a third the space of jewel box storage

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101187 WHITE
$19.95

Relisys Taurus Scanner

- Up to 9600 x 9600 dpi interpolated resolution
- Single-pass cold scan flatbed scanner
- 30-bit color with 1024 levels of gray

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Relisys Scorpio Scanner

- 30-bit color at up to 2400 x 2400 dpi interpolated resolution
- Single-pass flatbed scanner
- Includes a 16-bit SCSI card, cable, terminator, and software

105268 **$429.95**

4X6 Transparency Adapter available

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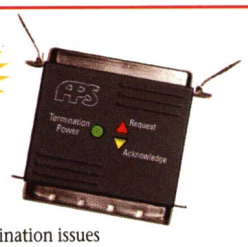

SCSI Sentry® II

- Solves tough termination issues
- Uses APS' patented DATerm®, Digital Active Termination®
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- Fits in the palm of your hand
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TELEMAX 6

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- Includes a manufacturers $500,000 connected equipment warranty

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PowerBook Wetsuit 1.0

- Offers excellent protection
- Padded neoprene case
- Fits PowerBook 500 or 140-180c

101390 BLACK WETSUIT 1.0
$34.95

GREAT PRICE

Tropez 902 Platinum

- 900 MHz digital cordless telephone
- Two-line operation, three-way conference calling, and speakerphone

100408 **$299.95**

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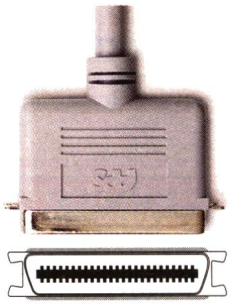

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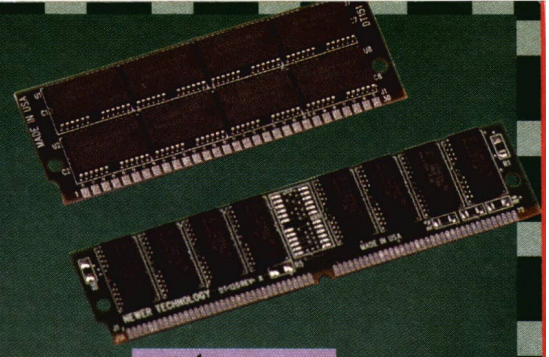

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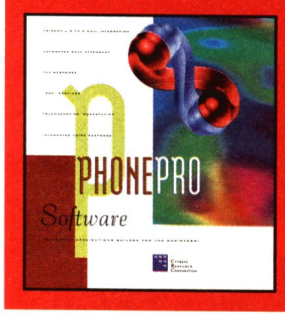

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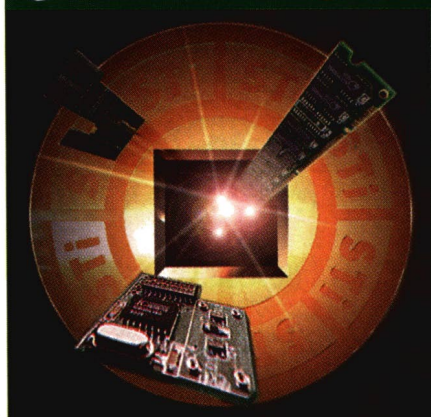

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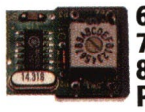

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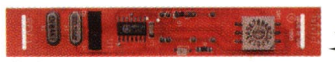

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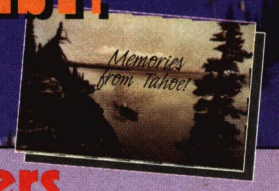

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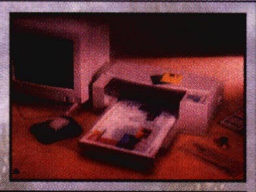

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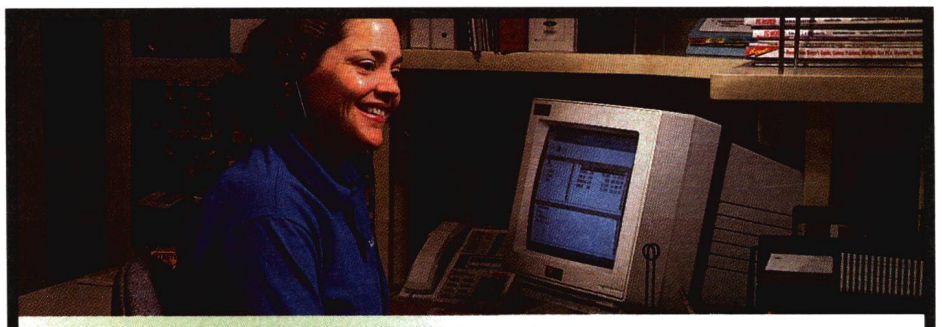

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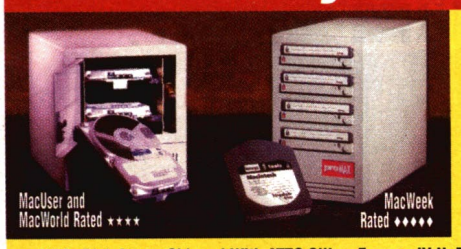

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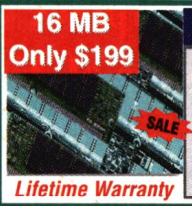

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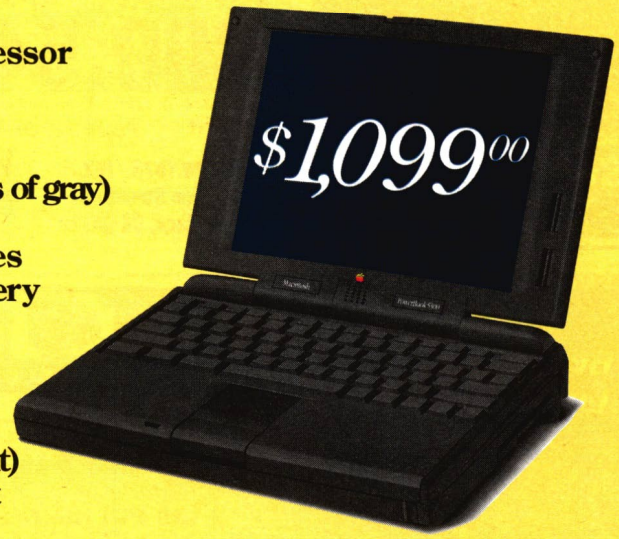

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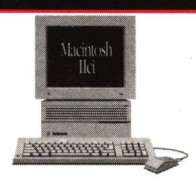

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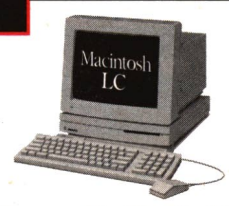

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550 5/160CD	795.
575 5/250CD	995.
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630 4/250	655.
631 8/500CD	745.
635 4/250CD	695.
637 8/350CD/15"	1297.
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6290 8/1.2Gig CD	1995.
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Source: 1994 MacWEEK Marketplace Subscriber Study

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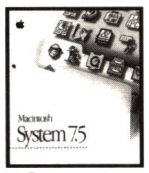

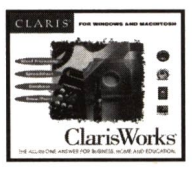

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LC550 to LC575	exchange $499
IIvx or IIci to Centris 650	exchange $299
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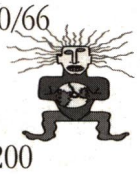

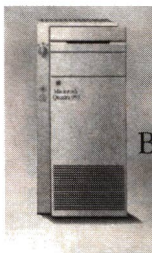

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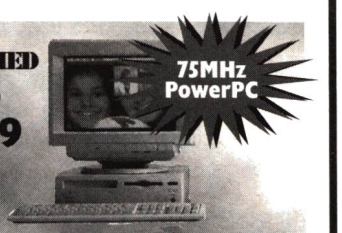

Quadra 840AV 0/0
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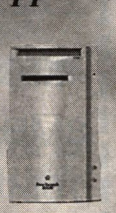

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LC630/DOS 12/500/CD	$799.
Performa 6100 8/250/CD	$849.
Performa 6205 8/1GB/CD	$999.
Centris 650 4/0	$649.
Quadra 605 4/160 NEW	$679
Quadra 660AV 4/0	$649.
Quadra 840AV 0/0	$1049.
Quadra 800 8/0	$1049.
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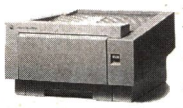

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- complete with ext. keyboard
- BIG software bundle

$1199 NEW

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Apple 15" MultiScan	$329.
Apple 21" Color	$1199.
RasterOps Sweet 16	$599.
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*Hewlett-Packard 20" with card	$899.
Radius TPD 19" mono	$399.
Radius TPD 21" mono	$549
Radius PrecisionColor/20	$1199.
Radius Color Display/21	$1299.
Radius PrecisionColor Pivot	$549.
RasterOps GDM-1950 20"	$849.

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Apple Personal LaserWriter 300	$299.
Apple Personal LaserWriter 320	$449.
Apple Personal LaserWriter NTR	$699.
Apple LaserWriter IINT	$699.
Apple LaserWriter IINTX	$899.
Apple LaserWriter Pro 630	$1199.
Apple LaserWriter 4/600PS	$649.
Apple Color Printer NEW	$699.
Apple Color StyleWriter Pro	$249.
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PowerBook 520 SALE top of page!

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- 8MB RAM
- 500MB hard drive
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- 1GB hard drive
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- 15" Apple MultiScan Display
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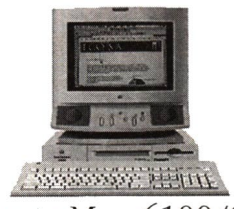

PowerMac 6100/60
pictured with 14" AV

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- 60MHz PowerPC™ 601
- 8MB RAM
- 250MB hard drive
- 2X Apple CD300i
- AppleDesign Extended Keyboard
- 14" Performa Plus Display
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For Macintosh LC series, Quadra 605, Performa 630 series
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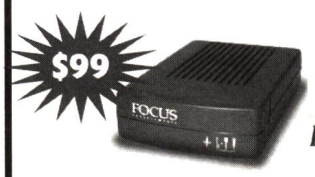

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SyQuest 44
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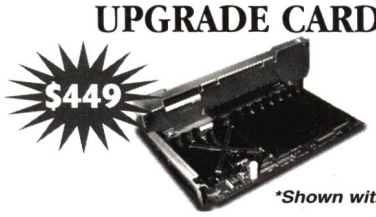

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8MB RAM required • For Quadra 610, 650, 700, 800, 900, 950, Centris 610 & 650 • Up to 66MHz
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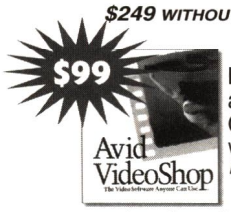

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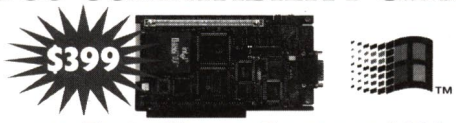

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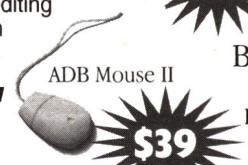

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- 256K CACHE Included
- Built in Video Card
- 3 PCI Slots
- Desktop Case
- System 7.5

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CACHE INCLUDED!!!!

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- 120MHz PowerPC
- 256K CACHE OPTIONAL
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- 3 PCI Slots
- Desktop Case
- System 7.5

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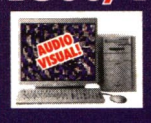
9500/132MHZ



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- 6 PCI Slots

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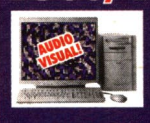

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- 6 PCI Slots

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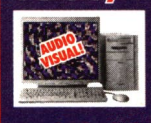

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- System 7.5

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- Desktop Case

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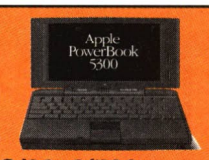

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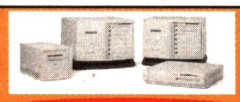

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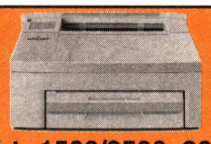

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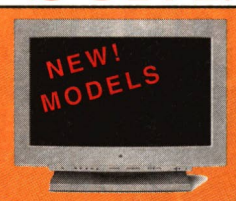

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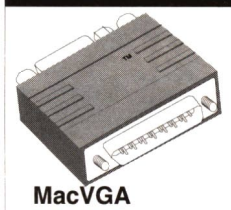

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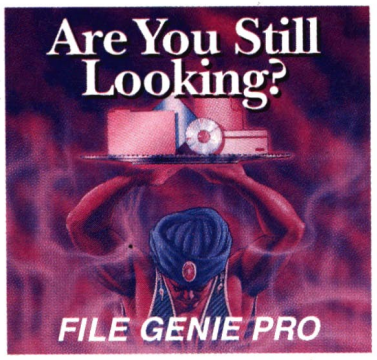

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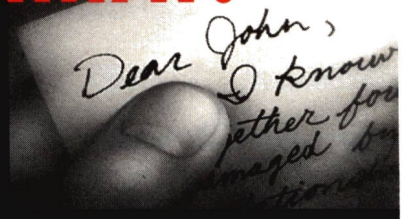

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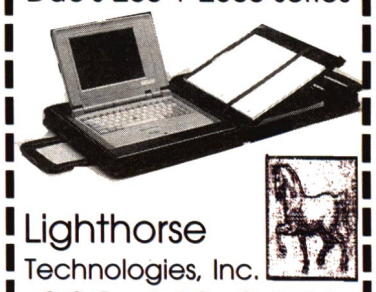

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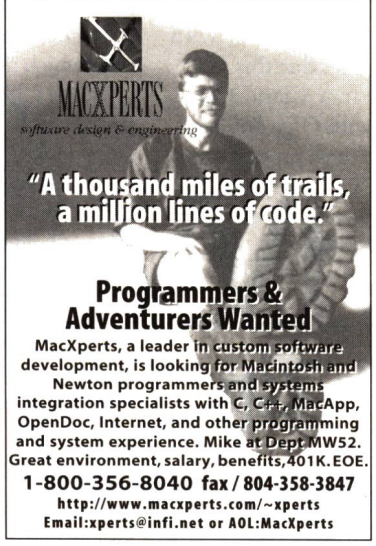

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NC

From Page 1

standard will provide a minimal set of capabilities and supported protocols.

According to CEO Gilbert Amelio, Apple's first NC, due to ship this year, will be a version of its Pippin. "It will be kind of a Pippin Plus," he said. In 1997 Apple will follow up with NC devices based on the Mac OS, Newton and future technologies, Amelio said.

In addition, Bandai Digital Entertainment Corp. of La Mirada, Calif., last week unveiled Pippin @World, which meets nearly all the NC specifications and will likely carry the NC moniker when it ships in September, the company said.

Fall release dates should give Apple and Bandai an edge in this category; IBM, of Armonk, N.Y., said it will ship NC devices before the end of the year and is currently testing several prototypes based on the PowerPC processor, but none of the other manufacturers supporting the NC specification has set a 1996 U.S. delivery date.

All NC devices must support a variety of Internet and networking standards, including HTTP (Hypertext Transport Protocol), FTP and SNMP (Simple Network Management Protocol). Security and network start-up protocols are also listed in the specification but are not required (see story, right).

Apple's QuickTime and the recently unveiled QuickTime Media Layer are not currently part of the NC standard, but Amelio said he hopes to see them incorporated into the specification by August.

NC devices will not require a hard drive; officials said users can save data on network servers.

In addition to the companies above, more than 30 others endorsed the guidelines, including Adobe Systems Inc., Corel Corp., Digital Equipment Corp., Macromedia Inc., MasterCard Corp., Motorola Inc., NEC Corp. and Visa International Inc.

Notably absent from the list of backers were Microsoft Corp. of Redmond, Wash., and Intel Corp. of Santa Clara, Calif. Microsoft said it will not endorse the NC because it lacks support for many Windows-based technologies. Analysts said the company wants support for ActiveX and DirectX technologies and an easier path for porting Windows applications.

Microsoft said it is working on its own Internet appliance platform but would not provide a due date; analysts predicted the earliest release for the product would be late 1997. Intel said it will concentrate on boosting the features of personal computers in the $2,000 range.

While this news may give further advantage to Apple and Bandai, the first NCs may find themselves squeezed between a collection of similar products when they arrive on store shelves.

Sega of America Inc. of Redwood City, Calif., last month unveiled Sega Saturn Net Link, a $199 modem and Internet add-on for its $199 game machine that will ship in September. Zenith Electronics Corp. of Glenview, Ill., last week unveiled NetVision, a line of television sets with built in Internet capabilities due this fall.

Chip Gliedman, a Santa Clara, Calif.-based industry analyst with Giga Information Group, said many of these products may find success. He said NCs are likely to sell to two distinct markets — businesses and home users — each with different needs.

Gliedman said sales of the devices will grow faster in the business market, while consumers wait for bandwidth and content issues to be resolved.

Ross Rubin, senior analyst for Jupiter Communications Inc. of New York, said Apple has a key advantage because of its position in multimedia. "To be successful, the NC needs better-defined multimedia and video standards. Right now the only common development platform it has is Java, and that just isn't compelling enough for most developers." He said Pippin may have the best chance for success in the home market because of the Mac's large supply of entertainment and education titles and the ease with which the products can be ported.

While Gliedman said he does not expect strong NC sales for at least two years, he agreed with Rubin that Apple is in the right position to assume an early lead. "Apple's brand name is their greatest advantage. We see good potential for Apple to be reborn as a consumer electronics company." □

NC profile weak in multimedia

The first draft of the Network Computer Reference Profile 1 calls for the support of a variety of standards currently in use on most personal computers.

The base-level NC will display images at 640 by 480 pixels, accept text, coordinate (pointing device) input, and output audio signals.

The supported Internet protocols will include TCP/IP, FTP, Telnet and SNMP. Optional will be the Network File System, a distributed storage protocol, and the User Datagram Protocol, which enables end-to-end, application-specific communications.

HTML, HTTP and Java will be part of the profile, along with e-mail protocols, including SMTP (Simple Mail Transfer Protocol), IMAP4 (Internet Messaging Access Protocol Version 4) and Post Office Protocol 3 (POP 3).

Multimedia is the weakest area of the draft profile: Only JPEG and GIF graphics and .WAV and .AU (Unix) sound files are on the list. Apple plans to add the QuickTime Media Layer to the profile, while Adobe Systems Inc. and Macromedia Inc. said they hope their respective Bravo graphics engine and Shockwave interactive playback technologies will be adopted.

Security features are optional and extend only to ISO 7816, a SmartCard standard, and the MasterCard/Visa commerce protocol.

The draft standard is at http://www.nc.ihost.com. — *By James Staten*

Iomega bucks up with Zip

By David Morgenstern

Iomega Corp. of Roy, Utah, last week found some needed working capital with a stock split and a proposed secondary offering.

The additional stock shares will primarily go to bolster its management recruiting effort, the company said. Iomega grew from 900 employees in 1995 to about 2,000 this spring.

The financial deals zipped up a strategy originally slated for the beginning of the year. While Iomega in February pulled a planned secondary offering (see 02.12.96, Page 1), the company's outlook is rosier now. Analysts said Iomega has solved its component-supply problems, finalized offshore manufacturing partners for Zip media and drives, and filled the distribution channel with drives. In addition, its stock doubled in value during that period.

Iomega's turnaround is because of strong sales of entry-level Ditto tape drives for the Intel-standard PC market and Zip removable media drives for Macs and PCs. It also released its high-performance Jaz drive this year.

In other news, Bandai Digital Entertainment Corp. of La Mirada, Calif., this month showed an Iomega Zip drive for Pippin @World, its low-cost Macintosh clone, at the Electronic Entertainment Expo in Los Angeles. The mechanism will be integrated into an optional docking station.

Acer Inc. of Taipei, Taiwan, last week said it will use a Zip drive in place of a hard drive in its $500 AcerBasic, an ultra-low-cost PC-market system.

In addition, Packard Bell Electronics Inc. of Westlake Village, Calif., last week unveiled a PC clone that will use a Zip drive. □

Monthly updates for Now Utilities

Now Software Inc. announced this month a program to provide free monthly updates to Now Utilities 6.0. via the Web.

The updates will include plug-ins, minor enhancements to existing components and bug fixes for Now Utilities.

The first update includes plug-ins for displaying Internet Protocol addresses, quickly locking and unlocking files and folders, and manipulating open windows in the Finder.

AppleScript launchers for Now Up-to-Date, Now Contact and OpenDoc editors are also included.

Now Utilities 6.0 has a street price of $89.95; upgrades from previous versions are $29.95. The free monthly updates are available at http://www.nowsoft.com.

Now Software Inc. of Portland, Ore., is at (503) 274-2800 or (800) 689-9427; fax (503) 274-0670; info @nowsoft.com. □

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Server to the Macs...

Sites

From Page 1

no new Macs, sources said the company's business units that depend on the computer complained bitterly to IS executives at the Mississaugua, Ontario headquarters.

"Forcing a change to Windows would hurt the bottom line," a source said.

As a result, Northern Telecom's IS group has reportedly turned a blind eye toward Mac purchases, which are said to be running in the millions of dollars already this year.

Stuart Greenfield, a systems analyst for the Texas state comptroller of public accounts in Austin, said his agency has fended off the push to Windows and will add 172 Power Macs to about 1,000 already installed.

Discussions about platform standardization crop up regularly, Greenfield said. "We fight the same religious wars as everyone else; that's not to say we're going to bail on the Mac." He said cost considerations still weigh in the Mac's favor. And increasing development on the Internet also gives the Mac an edge over Windows.

While there appear to be more successes in the war to keep the Mac inside corporations, all is not rosy. For instance, Macs remain under siege at a leading transportation company that requested anonymity. Sources said management believes the Mac trails significantly in shrink-wrapped software, which will put the transportation company at a competitive disadvantage. Macs are being bought this year, "but at a slower rate," a source said.

In addition, the Mac may have seen its final days at New York-based Ernst & Young, which is less than three months from completing a wholesale transition to Windows. Little more than a year ago the Big Six accounting firm was ranked 42nd on the MacWEEK 200 list of large sites, with 1,760 Macs installed.

"The decision was made at the national office," one source said. "Everyone is being forced to migrate to Windows 95."

In Apple's own backyard, the Pacific Bell Directory, a division of the regional telephone giant Pacific Bell of San Francisco, has just launched a three-year plan to phase out Macs.

Ted Kreutzer, project manager at the Pacific Bell Directory, said his group has 700 to 800 Macs currently in use. His superiors ordered the elimination of Macs because they believe "economies of scale" warrant the change, citing the benefits of a common infrastructure and more focused training of technical support staff.

Kreutzer, who argued against the decision, said: "There's a tremendous amount of misinformation about the Mac platform. It's being amplified by Apple's problems."

Steven Angelo, Apple vice president of enterprise sales and marketing, said the relentless publicity about Apple's troubles "hurt us significantly. But more, they hurt customers trying to make a case for Macs in business." □

Tanzania

From Page 1

slots as well as a single SIMM slot; it will handle up to 160 Mbytes of RAM. The system will use the less expensive EDO (extended-data-out) memory found in PCs.

Developers will receive the reference design around September, Apple said. Clones based on the platform will find their way into distribution in early 1997.

According to Steve Bernstein, Apple licensing marketing manager, the company's licensing is now divided into three phases that span the current Mac-only designs to the PowerPC Platform (PPCP), which can run multiple OSes. Phase One encompasses Apple's first licensees, including DayStar Digital Inc., Power Computing Corp. and UMAX Computer Corp., which offer clones based on the Power Mac 7500 and 9500.

Phase One Plus will offer a pair of platforms designated the Mac OS Licensing Design (MLD), previously called the Low End Reference Platform (see 03.18.96, Page 1). The first MLD will be based on the Power Mac 5400; the second will use the Tanzania board. Both platforms will use a greater range of industry-standard logic and peripheral components. "They capture the spirit of CHRP," or Common Hardware Reference Platform, the previous name for PPCP, Bernstein said.

Phase Two of the plan will be PPCP.

In addition to the PC-style RAM and I/O, Tanzania will offer the LPX board architecture popular with PC clones in both tower and desktop enclosures. It will also use lower-cost PS/2 power supply, a new version of the Cuda controller and a 2-D video controller from ATI Technologies Inc.

Bernstein said the MLD designs will let vendors come to market quickly with a low-cost Mac clone this year and early next year. Vendors that want to make the holiday season can use the 5400-based MLD design.

Although Apple said it expects the MLD to coexist with PPCP models in 1997, eventually PPCP systems will prevail. The transitional MLD designs may initially be less expensive to produce than PPCP systems; both Apple and Motorola said the PPCP designs will most likely be high-performance models, and the first generation of compatible chip sets may carry a price premium until manufacturers reach volume production levels.

With a 40-MHz system bus, Tanzania will be slower than the 66-MHz PPCP machines, but Bernstein said vendors will find it easier to engineer.

"It's a healthy sign," said analyst Amy Wohl, principal in Wohl Associates of Narberth, Pa. She said the low-cost designs will attract new licensees. "Power [Computing] is having a bonanza. If economic principles haven't been voted out of office, and they haven't, other players will enter the market." □

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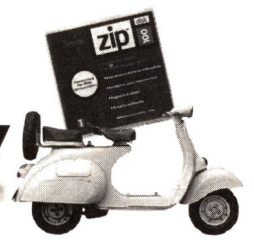
Why  ...

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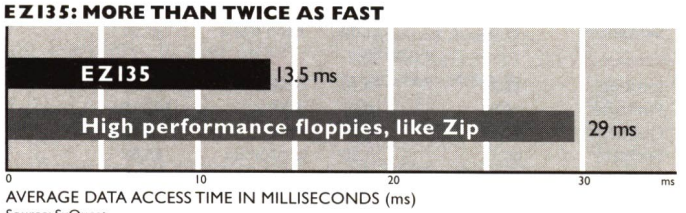

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Mac publishers outline scripting highs and lows

AppleScript, once a wayward sheep, is back in Apple's fold — and the publishing industry took the lead in shepherding it there.

"Apple had forgotten about it," said Sal Soghoian of Nyhthawk Productions of Charlottesville, Va. "We've been using it all along.

"Apple's starting to see that the grass-roots demand has increased," he said. "It's getting to a critical mass."

The renewed interest in scripting is in part thanks to the Internet, where publishers need to repurpose their work for the Web with a minimum of extra work. "The Web has increased the thirst for it," Soghoian said. "AppleScript is great at connecting, altering and formatting publishing data."

Indeed, scripting has shouldered many tedious publishing tasks. Michael Martin, partner at San Francisco's Fahrenheit 450, used AppleScript to create an automated publishing engine for an Apple catalog and wrote scripts to help a school yearbook publisher coordinate students' names with pictures. On a smaller scale, users routinely employ AppleScript to import and crop images or translate file formats.

While scripting may be helpful, it's not always easy. With Apple's attention elsewhere, developer support for AppleScript has been spotty, users said.

Scripting efforts in publishing mainly revolve around QuarkXPress, Quark Inc.'s page-layout program, but "even Quark's support for AppleScript is poorly documented," said Peter Truskier, technology manager at Star Graphic Arts Co. of Brisbane, Calif.

"I can't say we use [AppleScript] a lot," Truskier said. "One reason is a lack of support in many of the apps we use, notably Adobe's."

"Adobe [Systems Inc.] doesn't want to support anything unless it's cross-platform," Soghoian said. "But I'll work with [Apple] PhotoFlash before I work with Photoshop because it's scriptable."

Soghoian sells a group of scripts for XPress called Sal's AppleScript Snippets. "I wrote them because there's really no documentation for scripting XPress," he said. "Nobody else should have to go through this — it's enough to make you lose your girlfriend or anybody else." — *By Kelly Ryer*

Scripting

From Page 1

Object Model within itself.

As part of AppleScript's rebirth, Apple said it is putting together a new AppleScript staff, including engineers, marketing people and an evangelist. The company also plans to take a second shot at creating an Apple-events registry, which will define a set of guidelines for scriptable applications.

AppleScript's revival ends several years of dormancy. "AppleScript 1.0 and 1.1 came out, and then Apple just let it go — the AppleScript team was decimated," said Cal Simone, president of Main Event Software Inc., a developer of authoring tools for AppleScript based in Washington, D.C.

"The problems were AppleScript didn't have a critical mass of developers, and the level of support in scriptable applications was inconsistent," Simone said.

Apple's renewed interest in AppleScript comes in part from the realization that despite its own inattentiveness, people were using its scripting system (see story, left).

"Apple didn't know what AppleScript was good for," said Mark Alldritt, president of Late Night Software Ltd., a developer of AppleScript authoring tools in Vancouver, British Columbia. "The market had to show Apple what you can do with AppleScript, especially in multimedia, publishing and CGI development on the Web. I think Apple revived it purely because of what the market is doing."

A recent study of the color-publishing industry, commissioned by Apple, supports Alldritt's belief. According to research conducted by Griffin Dix Research Associates of Berkeley, Calif., 18 percent of the 600 sites polled said they used AppleScript. At businesses with more than 51 employees, the number of sites using AppleScript climbed to 26 percent.

AppleScript also figures into Apple's new corporate strategies. Param Singh, AppleScript product manager, said, "With our renewed focus on the Internet, publishing and OpenDoc, AppleScript gains new importance."

AppleScript will also play a bigger role in the next major revision of the OS. According to Apple, Mac OS 8, code-named Copland, will use Apple events as its primary mechanism for communications, which will allow much of the system to be driven by scripts.

During Apple's AppleScript hibernation, however, developers continued to use scripting tools. "There was this band of people doing scripting all along," Simone said. One of the companies that kept the scripting lamp lit was UserLand Software Inc., which recently released Version 4.0 of Frontier, its Apple events-based scripting software (see 05.20.96, Page 4).

"We were surprised to hear that Apple has plans to upgrade AppleScript, but it is no major change for us," said Dave Winer, co-developer of Frontier. "Our position [with respect] to AppleScript remains intact: Frontier will continue to serve as the most powerful multithreaded, native run-time environment for AppleScript."

Other members of the scripting community were more exuberant about Apple's plans. "I think Apple should continue to provide its core technologies, including AppleScript," Simone said. "I am quite pleased that Apple is taking back the care and feeding of AppleScript." □

Claris

From Page 1

message status data will be accessible via separate panes. Another tab will give administrators scheduling options for connecting to the Internet that mimic those found in Emailer.

Claris will offer some domain-name hosting services for OfficeMail. According to sources, administrators will be able to select a vanity subdomain name for their company that will be hosted on a Claris server. For example, a user's e-mail address would be user@company.clrs.com.

Sources said the company providing OfficeMail's Internet connectivity, Information Access Technologies Inc. of Berkeley, Calif., may provide regular domain name registration services (such as companyname.com).

Sources said OfficeMail will require about 1,800 Kbytes of RAM and will be available in both 680x0 and native Power Mac versions.

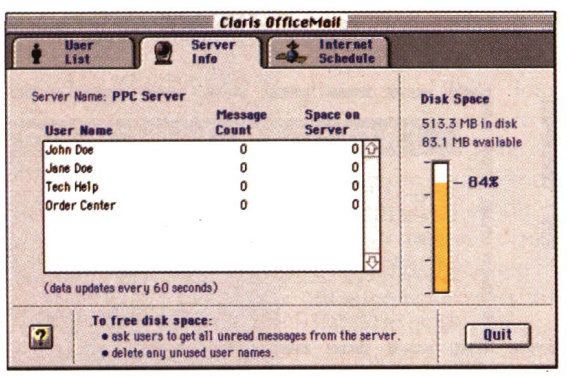
While OfficeMail will reportedly be bundled with Claris Emailer, sources said Emailer will not be required for sending and receiving mail. Instead, users will be able to employ any POP e-mail client, including Eudora from San Diego-based Qualcomm Inc. and Netscape Navigator. However, sources said, configuring other e-mail clients will be more complicated.

Claris will update Emailer when it ships OfficeMail. Sources said Emailer 1.1 will add support for AppleLink as well as OfficeMail, improve addressing features, and let users attach folders as enclosures and drag and drop text files into messages.

Emailer Lite, the slimmed-down version of Emailer that is bundled with the Apple Internet Connection Kit, will remain unchanged, sources said.

Earlier this month Claris cut the price of Emailer to $49 from $89. Sources said OfficeMail will cost about $300, which would be very competitive with e-mail packages such as SnapMail from Casady & Greene Inc. of Salinas, Calif., and QuickMail from CE Software Inc. of West Des Moines, Iowa.

Claris declined to comment. □



Claris OfficeMail's Server Info panel lets administrators view the number of messages pending for each OfficeMail user.

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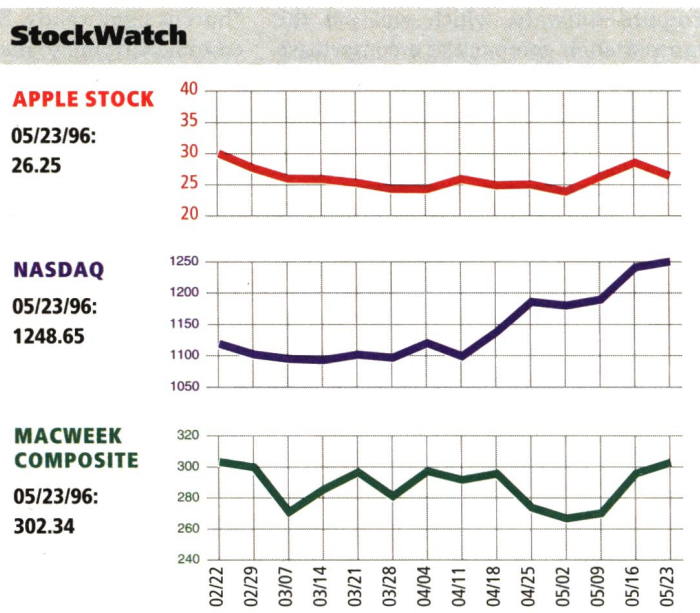

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Apple	26.25	-2.13
MacWEEK Composite*	302.34	7.19
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Adobe	41.88	-3.00
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Focus	4.00	0.44
Global Village	11.13	-6.38
HP	105.75	0.50
QMS	5.88	0.00
Radius	3.94	-0.06
Shiva	71.50	1.38
Tektronix	37.50	-1.00
Truevision	8.63	-0.38
DISTRIBUTORS		
CompUSA	47.63	2.75
IE	10.13	0.19
Merisel	4.63	-0.19
Tech Data	21.63	0.88
INDUSTRY INDICATORS		
Compaq	48.00	0.75
IBM	109.38	0.75
Intel	70.81	-1.06
Motorola	64.88	1.25
SGI	28.38	-0.75
NASDAQ	1248.65	9.34

**The MacWEEK Composite is calculated by adding the stock prices of the following companies: Apple, Adobe, Asanté, Caere, CE Software, Global Village, Intuit, Macromedia, Radius, Shiva, SyQuest and Truevision. Source: Nordby International Inc.*

RAM Doubler gets update

By Joanna Pearlstein

Connectix Corp. last week released an update to RAM Doubler that fixes several incompatibilities with System 7.5 Update 2.0, also known as System 7.5.3.

The RAM Doubler 1.6.2 update is available as a free download from the company's Web site. It prevents Finder Type 8 errors when 680x0-based PowerBooks are awakened, a freeze when copying files on some 68040-based systems running System 7.5.3, and an error when launching applications on volumes larger than 2 Gbytes.

The update also fixes a RAM problem with SoftWindows 2.0 from Insignia Solutions Inc., incompatibilities with PowerPC-upgraded PowerBook 500-series machines equipped with Global Village Communication Inc.'s internal modem, and a freeze with Dantz Development Corp.'s Retrospect 3.0 when restoring locally on PCI Power Macs.

In addition, RAM Doubler 1.6.2 resolves problems with Adobe Photoshop 3.0.5, Symantec Corp.'s ACT 2.5, Qualcomm Inc. 's Eudora 2.1.3 or later, and Dayna Communications Inc.'s Pocket SCSI/ Link.

Connectix Corp. of San Mateo, Calif., can be reached at (415) 571-5100 or (800) 950-5880; fax (415) 571-5195; info@connectix.com; http://www.connectix.com. □

ForeFront to buy ClickBook maker

The ForeFront Group Inc. of Houston last week announced plans to acquire Palo Alto, Calif.-based BookMaker Corp.

ForeFront said it has agreed to pay $5.7 million in common stock, $3 million of which will be paid upon closing and the balance to be paid when BookMaker meets performance expectations in 1997.

BookMaker is the developer of ClickBook, a utility for printing documents as double-sided, folding booklets. It also developed Surf 'n' Print, the company's Internet implementation of the utility.

ForeFront said it plans to add BookMaker's printing technology to its line of Internet tools, which includes WebWhacker, GrabNet and RoundTable. □

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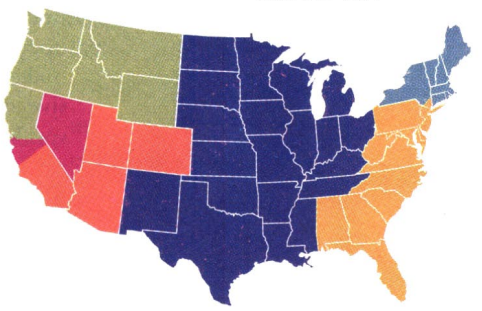

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Online this week

ZDNet The Mac's savior

Is it Gil Amelio? No, it's the Newton MessagePad. Mark Hall in his "Off The Record" column says the Mac and Newton would make a great bundle. See http://www.zdnet.com/macweek/mw_1021/opinion_record.html.

Good stuff

Looking for the latest Netscape Navigator plug-in? Or a list of last month's hottest-selling software titles? You can find those things and more at the MacWEEK Online Resources page. Check it out at http://www.zdnet.com/macweek/resources.html.

Where to find us online

On CompuServe, you'll find the MacWEEK Forum at go zmc: macweek and the free MacWEEK News menu at go zmc:mwnews. On the Web, visit our site at http://www.zdnet.com/macweek/.

Night of the long Knifes

Those of you who have followed the Knife's exploits faithfully lo these many years may very well be asking yourselves: "Hey! How do I get such a cushy gig? All I need to do is string together some adjectives and literary references into a vague semblance of English syntax, and wine, women and incendiary laptop devices will soon be mine."

Alas, dear reader, the truth is far less palatable: The life of the Knife is no bed of roses. Whether he is wallowing up to his sternum in a Mountain View trash Dumpster full of schematics and French vanilla coffee beans, passing himself off as Satjiv Chahil's dissolute younger brother Elroy at an Apple beer bash, or writing incredibly convoluted sentences in hopes of ensnaring MacWEEK's long-suffering copy desk, the Knife's labors in search of scoops can seem well-nigh herculean.

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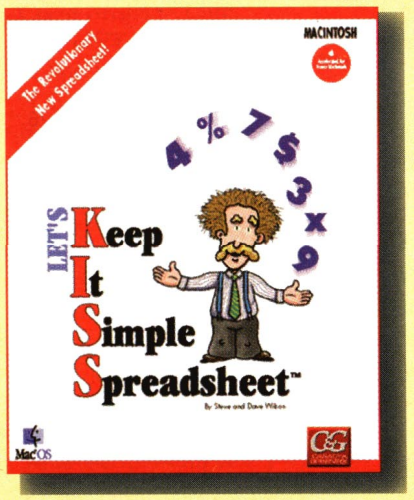

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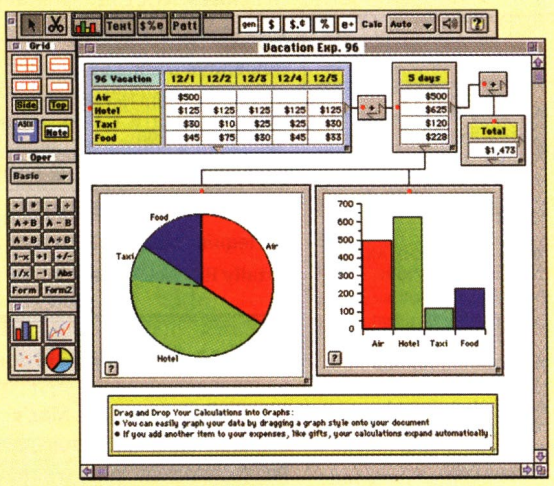
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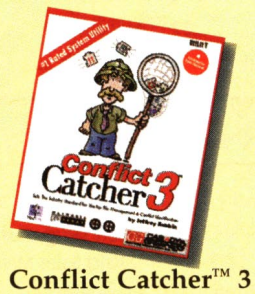

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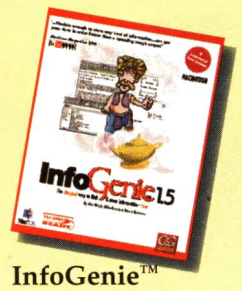

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Then again, sometimes the truth simply drops into the Knife's ample lap. Take a recent glossy, four-color program from those nice folks at QuarkXPress Users International advertising their 1996 conference and seminars. Among the entries described therein is a session on the hitherto legendary QuarkXPress 4.0.

According to the QUI crowd, XPress 4.0 will boast new long-document features, character-based style sheets, enhanced table generation, built-in document compression, ColorSync 2.0 support and the ability to print discontiguous pages. Considering this Quarkapalooza of an event is set for July, the Knife suspects the new XPress will be announced mighty soon.

Loose lips

Of course, the Knife does not stake the success or failure of this column on the vicissitudes of the U.S. Postal Service. Like rumormongers through the ages, he frequently garners his tips the old-fashioned way: by listening while some hapless yob inadvertently spills the beans in a public forum.

The Knife was fortunate to be privy to just such an event at E3, the consumer-electronics orgy held recently in Los Angeles. At one off-the-floor event, a caffeine-impoverished Apple flack allowed as how 3-D hardware acceleration will become standard equipment across the Mac line starting this fall. The hardware, which will be fixed on the motherboard or packed into slots, will include Apple designs as well as third-party technology.

Apparently overexcited by the plentiful supply of mimosas and thrilled by all the hubbub his pronouncements received, the lippy staffer asserted that Apple intends to make 3-D hardware acceleration as pervasive as CD-ROM drives in its boxes. And speaking of CD-ROMs, the speaker also earned unintentional bonus points with the Knife by announcing that Apple will skip 6x mechanisms entirely and go directly to 8x devices starting in 1997.

Power to the people!

And then, of course, there are those tips that come pouring out of the woodwork, borne aloft like crumbs of feta by the Knife's tireless army of pen pals, minions and hangers-on. Case in point: the amazing flailing power supply in some Power Mac 9500/120 models, which has inspired a collective howl of outrage among the Knife's correspondents.

According to these unhappy souls, their gruntlehood has been severely tried by Apple's lackluster response to their Macs' comatose condition. The power supply is reportedly on back order, and Apple is saying that it won't be available until June 7 at the earliest.

In the meantime, Apple is *not* offering a replacement unit for your bum box, even if it is still under warranty. You'll just have to do your video editing on that Mac Plus in the closet until the new power supplies come in. □

A 9500/120 makes a dandy paperweight, but a MacWEEK mug is a lot cheaper. All it takes is a tip to the Knife at (415) 243-3544; fax (415) 243-3651; mac_the_knife@macweek.com.

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Macweek
July 24, 1995

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MacUser Magazine
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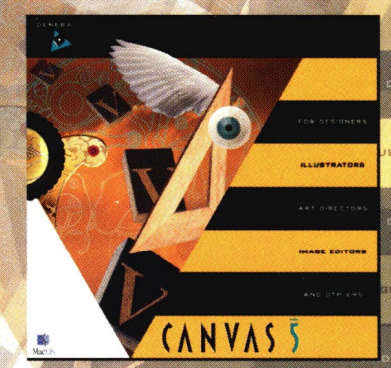

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